

**U.S. Department of
Energy NNSA/NSO
Approved
Work Smart
Standards, B2 and

(Format-1 Documents)**

**This revision includes changes approved thru
February 16, 2005.**

**Starting in August 2003,
Bechtel Nevada began
maintaining this document for
the
NNSA Nevada Site Office.**

**Please call 702/295-1989
for further information
about this document.**

Note:

1 - The law and standards applicable to all work activities includes Section 5(a)(1) of Public Law 91-596, Occupational Safety and Health Act (i.e., the "General Duty Clause") for development of office safety programs and, as required, a program for mitigating illness and injury associated with repetitive motion. The general requirements of Titles 29 CFR 1910, and 1926 are applicable to each work activity as defined in the standard. If properly implemented, these standards will mitigate the employee hazards not mitigated by the specific standards cited for each WBS element. Personnel are expected to comply with requirements in place for sites and work activities outside their normal work environment.

2 - The environmental regulations cited in WBS 4.5 serve as the umbrella requirements for all WBS elements irrespective of the specific standards which may or may not be cited in each discrete WBS listing.

3 - There are two conventions that should be understood with respect to the standards cited. These are:

(a) When an act or public law is cited, it automatically includes and invokes the codified requirements in the Code of Federal Regulations (CFR) that implement that act or law.

(b) All Title 29 CFR citations include the edition of the consensus standards (i.e., "standards incorporated by reference") in effect when the contract was signed. Other CFR citations include standards incorporated by reference as well; these are included as part of the baseline set although, depending upon the CFR Title, a specific edition may be incorporated rather than the edition in effect when the contract was signed.

4 - This report presents standards by grouping them into the following general categories within each WBS element as applicable: CFR, Consensus Standard, Department of Energy, Federal Government (not in another category), Municipal Code, Other (miscellaneous), State Regulations, and United States Code (USC).

Section 1 - Work Activity:

The following work activities are related to the Human Resources function of Employment:

Relocation

Assistance is provided for new employees and transferring employees in exempt classifications and may be offered to nonexempt personnel when deemed appropriate and approved by the DOE Contracting Officer. The actual relocation process relies on the coordination of the following components, two of which are contracted by the organization:

Employment

The activity includes directing and coordinating the entire relocation process, including travel arrangements (airline ticketing and settling-in lodging), and providing reimbursement and shipping guidelines to the next two components.

Traffic

The activity includes contracting a moving company to facilitate the movement and storage of household goods and personal effects of personnel within the guidelines established by the relocation agreement.

Travel & Relocation

The activity includes the documentation and reimbursement of all authorized expenses in conjunction with the transportation of the employee and dependents.

Travel Agency

The activity includes, when appropriate, the booking of airline tickets, rental cars, and lodging for the employee, as authorized.

Outplacement

An Outplacement Center has been established following the guidelines of the "National Defense Authorization Act of FY 1993," Section 3161, which requires government contractors to provide such assistance for displaced workers affected by workforce restructuring events. Other outplacement components related to Human Resources are described as follows:

Employment Assessment

The activity includes assisting affected employees in assessing their education, knowledge, and skill levels thereby assisting in the pursuit of employment.

Job Search Assistance

Resume assistance is provided in cooperation with the Nevada Business Service. Information regarding unemployment insurance, union opportunities, employment opportunities, credit counseling services, and federal and state programs is provided by the state of Nevada. A job search network is used to broadcast job openings received from the DOE-generated Job Opportunity Bulletin Board (JOBBS) and other companies, to access America's Job Bank database, and to access data on the Internet.

1.1.1 **Employment**

Latest Revision: 11/30/04

Training/Retraining

DOE has provided funding for educational assistance which is used to provide counseling and administrative oversight of the application/reimbursement process.

Staffing

A small core of personnel are provided to support the recruiting, advertising, and college relations programs as well as to administer the requisition and job-posting programs.

Section 2 - Hazards and Management Issues:

No unique hazards exist beyond a normal office environment.

Relocation management issues involve the application of the following initiatives:

- Determination of allow ability of actual relocation expenses.
- Prompt reimbursement of all authorized expenses.
- Expediting reporting of employee to work at new location.

Outplacement management issues involve the application of the following initiatives:

- Turnaround time for outplacement assistance.
- Consolidation of the education assistance administration.

Staffing management issues involve the application of the following initiatives:

- Matching job openings with the qualified pool of applicants to meet staffing goals.
- Ensuring dislocated workers are considered for employment.

Section 3 - Standards:

The Necessary & Sufficient set of standards consists of the following mandated requirements:

Standard	Title
29 USC 621, et seq.	Age Discrimination in Employment Act of 1967
<i>Note</i>	<i>Make employment decisions without discriminating based on age. Updated per BCR 2004-029, 10/20/04.</i>
29 USC 701, et seq.	Rehabilitation Act of 1973
<i>Note</i>	<i>Make employment decisions without discriminating based on disabilities. Updated per BCR 2004-029, 10/20/04.</i>
42 USC 12111, et seq.	Americans with Disabilities Act (ADA)
<i>Note</i>	<i>Make employment decisions without discriminating based on disabilities. Updated per BCR 2004-029, 10/20/04.</i>
42 USC 2000e, et seq.	Equal Employment Opportunity

1.1.1 *Employment*

Latest Revision: 11/30/04

Note *Make employment decisions without discriminating based on race, color, national origin, religion, or gender. Updated per BCR 2004-029, 10/20/04.*

48 CFR 31.205-35 Federal Acquisition Regulations System Relocation Costs

Note *Required action: allowable actual relocation expenses; reimbursing authorized expenses; and expedited reporting to work. Updated per BCR 2004-029, 10/20/04.*

DOE O 350.2A Use of Facility Contractor Employees for Services to DOE in the Washington, D.C., Area

Note *Updated per BCR 2004-029, 10/20/04.*

NV O 350.2 Use of Facility Contractor Employees for Services to DOE in the Washington, D.C., Area

Note *Added per BCR 2002-016.*

29 USC 2601 Family and Medical Leave Act

Note *Ensures ability to return to work after an FMLA leave under certain conditions. Updated per BCR 2004-029.*

42 USC 7274h DOE Defense Nuclear Facilities Workforce Restructuring Plan

Note *Specifies outplacement assistance and consideration of displaced workers for future employment. Updated per BCR 2004-029, 10/20/04.*

42 USC 653 National Directory of New Hires

Note *Specifies reporting names of new hires to state agencies within a certain period of their start date. Added per BCR 2004-029, 10/20/04.*

Section 4 - Measurement Parameters:

RELOCATION

- Actual relocation expenses versus maximum allowable expenses.
- Number of days from start of relocation until employee reports to work.

OUTPLACEMENT

- Percent of displaced employees that were assisted through the Outplacement Center.
- Percent of displaced employees obtaining employment through the Outplacement Center.
- Percent of displaced employees that received or are receiving educational assistance.

STAFFING

- Number of days to identify qualified candidate once requisition is approved.

Section 5 - Implementation Considerations:

Consideration should be given to developing and implementing an office safety program.

RELOCATION

Arranging travel, lodging, and rental car reservations is an administrative burden since standards do not require the organization to actually arrange reservations.

OUTPLACEMENT

Preparing resumes for displaced workers is a significant activity since most affected workers do not have the skills necessary to complete the task independently. Turnaround time on an individual resume has increased from two days to two weeks since 1993. The staff size has continued to decrease while the number of dislocated workers has increased.

STAFFING

The existing job posting program requires e-mailing job opening information to the cognizant personnel who must then manually post the positions on non-electronic bulletin boards.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

Mandated regulations may require revisions to the Human Resources Appendices to existing contracts.

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

The following work activities are related to the Employee Relations function:

Equal Employment Opportunity (EEO) Activities

All managers, supervisors and employees must comply with provisions of federal and state laws as they pertain to nondiscrimination, affirmative action, and equal employment opportunity. Affirmative Action Plan(s) (AAP) are prepared, disseminated, and monitored. Responses are prepared for both internal and external discrimination complaints. Work is conducted with appropriate entities to ensure that employees receive applicable EEO training.

Grievance Activities

Assistance is provided in responding to internal grievances raised by employees, applicants or previous employees. After verification of facts, a recommendation may be made to resolve the concern and to ensure that the issue has been adequately addressed.

Substance Abuse Activities

A safe work environment is provided for all employees. Education, drug testing, employee assistance, and a rehabilitation aspect are provided whenever possible. Punitive action is taken when necessary to reduce the possibility of accidents by employees who use illegal drugs or misuse or abuse alcohol and to mitigate the harm should such events occur.

Section 2 - Hazards and Management Issues:

The potential for workplace violence, which is recognized as a serious management issue, is addressed with cited standards in WBS 3.7. However, failure to maintain a safe work environment, including eliminating sexual harassment, could result in a host of negative impacts including costly litigation and increased medical costs.

Noncompliance with an AAP can result in the potential loss of the current contract with DOE. Further, failure to support EEO activities, grievance processes, and substance abuse activities (e.g., not fully considering all factors and reporting them accurately) could diminish productivity.

Failure to maintain full and comprehensive reports and records of response to discrimination complaints, both internal and external, can result in the loss of productivity due to a potential necessity to reconstruct the original paper trail and could lead to significant litigation costs.

The inability to maintain confidentiality agreements, particularly in dealings with agencies or individuals external to the organization, could pose serious consequences such as civil suits.

Section 3 - Standards:

The Necessary & Sufficient set of standards consists of the following mandated requirements:

Standard**Title**

10 CFR 707

Workplace Substance Abuse Programs at DOE Sites

Latest Revision: 11/30/04

Note Defines program content, processes, and Testing Designated Positions. Updated per BCR 2004-029, 10/20/04.

29 USC 621, et seq. Age Discrimination in Employment Act of 1967

Note Prohibits discrimination based on age. Updated per BCR 2004-029, 10/20/04.

41 CFR 60-1 Obligations of Contractors and Subcontractors

Note Defines obligations of contractors and subcontractors. Updated per BCR 2004-029, 10/20/04.

41 CFR 60-2 Affirmative Actions Plans

Note Requires development, implementation and dissemination of Affirmative Action Plans. Updated per BCR 2004-029, 10/20/04.

42 USC 12111, et seq. Americans with Disabilities Act (ADA)

Note Prohibits discrimination based on disabilities. Updated per BCR 2004-029, 10/20/04.

42 USC 1981, et seq. Civil Rights Act of 1964

Note Guarantees equal rights for all. Updated per BCR 2004-029, 10/20/04.

42 USC 2000e, et seq. Equal Employment Opportunity

Note Prohibits discrimination based on race, color, national origin, religion, or gender. Updated per BCR 2004-029, 10/20/04.

5 USC 552a Privacy Act

Note Maintain confidentiality during investigations and of records resulting from investigations. Updated per BCR 2004-029, 10/20/04.

38 USC 4212 Vietnam Era Veterans Readjustment Assistance Act of 1974

Note Requires development, implementation, and dissemination of Affirmative Action Plans for certain veterans. Updated per BCR 2004-029, 10/20/04.

29 USC 791, et seq. Rehabilitation Act of 1973

Note Requires development, implementation, and dissemination of Affirmative Action Plans for individuals with disabilities. Updated per BCR 2004-029, 10/20/04.

29 USC 2601 Family and Medical Leave Act

Note Guarantees employee position during leave; notice and record keeping requirements. Updated per BCR 2004-029, 10/20/04.

Section 4 - Measurement Parameters:

EEO Activities:

- Number of equal employment opportunity complaints per total number of employees.
- Decline in the trend of registered equal employment opportunity complaints.

Grievance Activities:

1.1.2 ***Employee Relations***

Latest Revision: 11/30/04

- Number of grievances processed per total number of employees (i.e., ratio).
- Decline in the trend of grievances filed.

Substance Abuse Activities:

- Percent of employees requiring substance abuse rehabilitation.
- Decline in the trend of incidents associated with substance abuse.

Section 5 - Implementation Considerations:

Grievances, discrimination complaints, and concerns may be filed internally or externally. After jurisdiction has been established, an investigation to determine the facts is conducted. Once the investigation is complete, and after an analysis of the facts is concluded, recommendations are made. Procedures are being developed or revised to improve the processing of these issues.

An Alternative Dispute Resolution process should be established whereby, once jurisdiction is instituted, the parties involved would be called to a meeting to determine the facts in the matter, to determine what is being sought for resolution, and to assist in making an agreement satisfactory to all parties involved. This process could be implemented using internal trained mediators.

In order for managers to become familiar with the previously mentioned standards, training in Equal Opportunity Management, with a refresher course every three years, should be mandatory for managers and supervisors. Employees should be provided training on sexual and other types of harassment, as well as an introduction to the EEO/AA process and the Diversity Program.

An office safety program should be developed and implemented to cover the specific hazards associated with an office work environment.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

Potential problems could arise if neutrality and confidentiality is not exercised in actions taken, issues addressed, and resolutions proposed for complaints or concerns brought by employees. The organization and individual managers could be subject to civil penalties, fines, lawsuits, etc.

Section 1 - Work Activity:

This work activity includes a pay plan and changes to that plan. It involves developing and executing pay delivery programs, premium and incentives, pay adjustments, job definitions and position descriptions, employee performance management/feedback, and earnings. The pay plan is based upon analyses which defines each employees' pay in relationship to local/national market surveys, justifies an amount to be distributed for merit, promotion, and adjustments to pay, justifies changes to the pay plan structure, allows for changes in an individual employees' pay, job titles, and levels, and includes management's participation in determining compensation strategy.

The scope of this work activity includes management, administration, plan design and eligibility, and communications. Financial and payroll standards associated with this compensation activity are reported under WBS 1.2, Finance. Represented (union) employees' pay plans are determined and administered per negotiated agreements.

Section 2 - Hazards and Management Issues:

No unique hazards exist beyond those found in an office environment.

Dissatisfaction with pay or low employee morale increases the potential for reduced productivity, higher turnover, grievances, and increased absenteeism.

The compensation strategy must be effective in attracting and retaining highly qualified personnel to meet mission objectives without affecting the current competitive position. The customer must perceive the cost associated with doing work to be reasonable.

Job definition (i.e., tasks and duties) and necessary employee qualifications (e.g., knowledge, experience, training, certifications) must be identified to adequately describe work, communicate performance requirements, and provide feedback regarding performance.

Compensation administration and communication must not be discriminatory from the reference points of equality and other civil right perspectives.

Administrative, legal, and reporting costs associated with responding to government agency inquiries due to internal/external investigations or grievances are significant.

Federal or state government agencies impose penalties for improper pay associated with assigned/performed work, work hours, and/or overtime.

Section 3 - Standards:

Applicable state or foreign statutes are followed wherever employees are assigned. The Necessary & Sufficient set of standards related to this work activity is as follows:

Standard	Title
29 USC 201	Fair Labor Standards Act of 1938

1.1.3 Compensation

Latest Revision: 11/30/04

Note Sets minimum wage and overtime pay standards and establishes record keeping requirements. Updated by BCR 2004-030, 10/20/04.

29 USC 701, et seq. Rehabilitation Act of 1973

Note Prohibits discrimination by federal contractors against individuals with disabilities. Note updated by BCR 2004-030, 10/20/04.

40 USC 276a Davis-Bacon Act

Note Guarantees employees on federally funded projects prevailing wages. Note updated by BCR 2004-030, 10/20/04.

42 USC 12111, et seq. Americans with Disabilities Act (ADA)

Note Prohibits discrimination in hiring, firing, and terms and condition of employment for people with disabilities. Note updated by BCR 2004-030, 10/20/04.

State Wage and Hour Laws State Wage and Hour Laws

Note Defines employees eligibility for minimum wages, and defines work hours and overtime provisions. Note updated by BCR 2004-030, 10/20/04.

29 USC 2101 Worker Adjustment and Retraining Notification Act

Note Provide notice of layoffs and plant closures. Updated by BCR 2004-030, 10/20/04.

41 USC 35-45 Walsh-Healey Act

Note Regulates hours of work and wages of employees on federal contracts for the manufacturing or furnishing of goods, supplies, articles, or equipment. Updated by BCR 2004-030, 10/20/04.

41 USC 351-358 Service Contract Act

Note Minimum wage law for employees providing a service under federal contracts and subcontracts. Updated by BCR 2004-030, 10/20/04.

29 USC 206 Equal Pay Act

Note Guarantees equal rights for all. Updated by BCR 2004-030, 10/20/04.

42 USC 1981, et seq. Civil Rights Act of 1964

Note Protects employees from discrimination based on race, sex, nationality or age, and nondiscriminatory compensation. Updated by BCR 2004-030, 10/20/04.

42 USC 7274h DOE Defense Nuclear Facilities Workforce Restructuring Plan

Note Establishes preference in hiring. Updated by BCR 2004-030, 10/20/04.

Executive Order 11246 Equal Employment Opportunity

Note Requires government contractors not to discriminate. Updated by BCR 2004-030, 10/20/04.

38 USC 4212 Vietnam Era Veterans Readjustment Assistance Act of 1974

Note Defines how employers treat compensation for covered individuals. Updated by BCR 2004-030, 10/20/04.

1.1.3 Compensation

Latest Revision: 11/30/04

40 USC 327, et seq.

Contract Work Hours and Safety Standards Act

Note Establishes maximum work hours and defines work hours and overtime. Updated by BCR 2004-030, 10/20/04.

29 USC 621, et seq.

Age Discrimination in Employment Act of 1967

Note Requires that employers not discriminate in pay due to age. Updated by BCR 2004-030, 10/20/04.

18 USC 874

Copeland Anti-Kickback Act

Note Precludes employers from inducing an employee to give up part of the compensation to which he/she is entitled. Updated by BCR 2004-030, 10/20/04.

Section 4 - Measurement Parameters:

Annual review of the compensation plan to determine if pay increases in the focused areas occurred and if the milestones were achieved within the time lines established.

Compare pay changes to the criteria defined in the CIP guidelines, i.e., the dollar and percentage amounts do not exceed that targeted for merits, promotions, adjustments.

Timely submittal of information relating to jobs and pay to state and federal agencies such as the Department of Labor and Office of Federal Contract Compliance Program.

Perform job evaluations and job audits in accordance with annual goals and objectives.

Completion of work within preestablished time lines and the turnaround time for job evaluation or pay action processing activities since this is a service-oriented activity.

Number count/percent of project to be completed within a specified time frame.

Dollars spent, unit cost activity, ratio of staff to enterprise and base pay can be defined. These are usually best established under general Human Resources WBS definitions.

Section 5 - Implementation Considerations:

The philosophy and strategies should maximize retention of incumbent employees and provide financial motivation to attract qualified personnel to meet mission objectives. A consistent and cost-conscious approach to competitive pay and internal equity should be practiced. Information should be provided to guide management decisions and to control compensation costs (e.g., turnover analyses, turndown for offered jobs, etc.).

Human Resources aspects of DOE Contracts must be negotiated and approved before changes are made in specified areas. DOE guidance on the same or other specified areas may require unique processing or communication activities to include special reporting.

It is important to convey changes in compensation policies, procedures or practices to employees in a timely and effective manner. Such changes affect their perception of the value of their contributions and/or actual net income and they need the opportunity to understand and adjust to the changes. Effective communications can reduce the

1.1.3 Compensation

Latest Revision: 11/30/04

number of complaints to management or third parties, which would eliminate the need to respond to individual employee, customer and third party review challenges.

Consideration should be given to developing and implementing an effective office safety program.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

Not applicable

Section 9 - Vulnerabilities:

Public and customer relations problems can exist when and if employees complain to outside representatives about compensation activities.

Section 1 - Work Activity:

This work activity is based upon benefit strategy, which defines employees' benefit eligibility, options and contributions in relationship to management philosophy and surveys. The scope of work includes plans and changes to them; delivery programs; employee eligibility, and enrollments; employee/company contributions or premiums; vendor/administrator selection and performance; establish/use of an executive administrative committee; consultant/advisor selection and performance; and associated budgets and costs related to health and welfare benefits and pension plans.

Health & Welfare Benefits include any plan, fund or program established or maintained for the purpose of providing for its participants or their beneficiaries, through the purchase of insurance or by making other financial arrangements, medical, surgical, or hospital care in the event of sickness, accident, disability, death, or unemployment. It may also include other benefits such as paid leave programs. For the purpose of this work activity, workers' compensation and state unemployment insurance standards have been identified to ensure that proper understanding and referencing exist for claims processing, as well as effective and timely communications and/or coordination of benefits as required.

Pension benefits include defined benefit Retirement Plans and defined contribution Savings Plans which provide retirement income or defer income to a time after covered employment ends. The savings plan provides employees with investment options prior to their retirement years. These plans provide employees with two options for income protection -- retirement income replacement and payments or income for survivors. The scope of work includes management, administration, plan design and eligibility, and communications.

Craft (Union) benefits activities are not represented since they must be administered according to a negotiated agreement rather than following federal or state standards.

Section 2 - Hazards and Management Issues:

No unique hazards exist beyond those found in an office environment.

Disqualification of plan (loss of tax-favored or qualified status) for failure to provide benefits in line with legal standards, plan definition, and eligibility requirements.

Failure to provide required or committed benefits.

Administrative or reporting penalties due to improper plan definition; failure to communicate, process, or interpret benefits; or failure to report information in a proper and timely manner.

High costs associated with poor plan design, eligibility, or plan claims/experience. Since the health plan is self-funded, there is a risk of the plan exceeding projected budget amounts which has an adverse affect on overhead costs and profitability.

Inadequate funding arrangements, unusually high claims, or poor portfolio performance could result in plans becoming under-funded. Funding requirements, administrative costs, and benefit reimbursements are complicated

issues and require total understanding of the various plan requirements, administrative options and processes the associated costs.

Section 3 - Standards:

Applicable state or foreign statutes are followed wherever employees are assigned. The Necessary & Sufficient set of standards related to this work activity is as follows:

Standard	Title
29 USC 1001, et seq.	Employee Retirement Income Security Act (ERISA) of 1974
Note	<i>Benefit provisions meet legal standards, plan definition, eligibility requirements. Updated by BCR 2004-031, 10/20/04.</i>
29 USC 621, et seq.	Age Discrimination in Employment Act of 1967
Note	<i>May not discriminate in participation, contribution, or benefit provisions against any protected group. Updated by BCR 2004-031, 10/20/04.</i>
42 USC 300e	HMO Amendments Act of 1988
Note	<i>Health Plans. Updated by BCR 2004-031, 10/20/04.</i>
State Disability Laws	State Disability Laws
Note	<i>Issues resolved: (1) benefit provisions meet legal standards, plan definition, eligibility requirements; (2) provide required and committed benefits; (3) information communication and reporting; (4) periodic budget/expenditure review; and (5) funding arrangement and investment portfolio review.</i>
State Unemployment Laws	State Unemployment Laws
Note	<i>Issues resolved: (1) benefit provisions meet legal standards, plan definition, eligibility requirements; (2) provide required and committed benefits; (3) information communication and reporting; (4) periodic budget/expenditure review; and (5) funding arrangement and investment portfolio review.</i>
Internal Revenue Codes (IRC) 26 USC	Internal Revenue Codes (IRC)
Note	<i>Health & Welfare and pension plan requirements related to discrimination testing; limits; taxation; distributions; funding, vesting, and coverage standards; and definitions. Updated by BCR 2004-031, 10/20/04.</i>
42 USC 402	Old-age Survivors, and Disability Insurance Program (OASDI) and Medicare
Note	<i>Health & welfare and pension plans. Updated by BCR 2004-031, 10/20/04.</i>
26 USC 401, et seq.	Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA)
Note	<i>Qualified pension, profit-sharing, and stock bonus plans. Updated by BCR 2004-031, 10/20/04.</i>
29 USC 1055, et seq.	Retirement Equity Act of 1984
Note	<i>Benefit provisions meet legal standards, plan definition, eligibility requirements. Updated by BCR 2004-031, 10/20/04.</i>
42 USC 1162, et seq.	Consolidated Omnibus Budget Reconciliation Act (COBRA) of 1985

1.1.4

Health & Welfare Benefits/Pension Plans

Latest Revision: 11/30/04

Note Employer cannot require Medicare to be the primary payer for participants age 70 and over; plans must provide for continuation of coverage for qualified participants and beneficiaries. Updated by BCR 2004-031, 10/20/04.

26 USC 132 Deficit Reduction Act of 1984

Note 501(c)(9) trusts and experience-rated plans, flexible benefit plans and flexible spending accounts, and health care for dependents. Updated by BCR 2004-031, 10/20/04.

42 USC 1841, et seq. Civil Rights Act of 1964

Note Prohibits discrimination in employment practices based on race, color, religion, sex, or national origin. Added by BCR 2004-031, 10/20/04.

26 USC 7805, et seq. Tax Reform Act of 1986 (TRA)

Note Addresses before-tax and age 59 1/2 withdrawals in defined contribution plans and distribution requirements at age 70 1/2 for both defined contribution and defined benefit plans. Added by BCR 2004-031, 10/20/04.

29 USC 1342a Omnibus Budget Reconciliation Act of 1987 (OBRA 87)

Note Tightened funding standards for defined benefit plans, further restricted plan terminations, and moved the PBGC to a much higher and variable premium. Added by BCR 2004-031, 10/20/04.

29 USC 2611, et seq. Family Medical Leave Act of 1993 (FMLA)

Note Guarantee of employment during leave, health & welfare plan continuation and payments, vesting requirements, employer notice, and record-keeping requirements. Added by BCR 2004-031, 10/20/04.

42 USC 1320d, et seq. and 26 USC 9801, et seq. Health Insurance Portability and Accountability Act of 1996 (HIPAA)

Note Restrictions on pre-existing condition limitations, special enrollment periods, prohibition on discrimination based on health status, written certification of coverage requirements, mental health parity and maternity-stay mandates, privacy and security of information. Added by BCR 2004-031, 10/20/04.

29 USC 1185a Mental Health Parity Act of 1996

Note Mental health benefits have parity with physical health benefits in application of certain limits. Added by BCR 2004-031, 10/20/04.

29 USC 1185 Newborns' and Mothers' Health Protection Act of 1966

Note Standards relating to benefits for mothers and newborns. Added by BCR 2004-031, 10/20/04.

26 USC 414 Small Business Job Protection Act of 1996

Note Distribution requirements for active employees attaining age 70 1/2, sample language for Qualified Domestic Relations Orders. Added by BCR 2004-031, 10/20/04.

29 USC 1024 and 1201 Taxpayer Relief Act of 1997

Note Elimination of certain filings with the Department of Labor; changes in plan administration. Added by BCR 2004-031, 10/20/04.

42 USC 300gg-4 Women's Health and Cancer Rights Act of 1998

Note Requires coverage for reconstructive surgery following a mastectomy. Added by BCR 2004-031, 10/20/04.

1.1.4 ***Health & Welfare Benefits/Pension Plans***

Latest Revision: 11/30/04

Department of Labor Regulations

Department of Labor Regulations

Note *Added by BCR 2004-031, 10/20/04.*

Health Care Financing Administration
(HCFA) Regulations

Health Care Financing Administration (HCFA) Regulations

Note *Added by BCR 2004-031, 10/20/04.*

Financial Accounting Standards Board
Statements #87 and #106

Financial Accounting Standards Board Statements #87 and #106

Note *Added by BCR 2004-031, 10/20/04.*

Pension Benefit Guaranty Corporation
(PBGC) Regulations

Pension Benefit Guaranty Corporation (PBGC) Regulations

Note *Added by BCR 2004-031, 10/20/04.*

26 USC 410 and 416

Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA)

Note *Changed rules for 401(k) plans. Added by BCR 2004-031, 10/20/04.*

26 USC 401

Uruguay Round Agreements Act (GATT) IRS Restructuring and Reform
Act of 1998 Community Renewal Tax Relief Act of 2000

Note *Part of GUST, a set of laws that require amending retirement plans. Added by BCR 2004-031, 10/20/04.*

38 USC 4301, et seq.

Uniformed Services Employment and Reemployment Rights Act of 1994

Note *Part of GUST, a set of laws that require amending retirement plans. Added by BCR 2004-031, 10/20/04.*

Section 4 - Measurement Parameters:

Annual expenditures within preestablished benefit projections.

Annual review of plan participation levels to include highly compensated employees (when applicable).

Establish new benefit plans or changes in administration in accordance with annual goals and objectives.

Timely submittal of information to state and federal agencies such as the Department of Labor and Internal Revenue Service and to vendors and administrators.

Completion of work within preestablished time lines and the turnaround time for benefits processing activities since this is a service-oriented activity.

Number count/percent of project to be completed within a specified time frame.

Dollars spent, unit cost activity, ratio of staff to full enterprise and base pay can be defined. These are typically best established and measured under overall Human Resources definitions.

1.1.4 *Health & Welfare Benefits/Pension Plans*

Latest Revision: 11/30/04

Acceptable investment manager performance to include rate of return on investment portfolio.

Number of days until an employee off-duty due to job-related injury or illness is returned to at least limited duty.

Section 5 - Implementation Considerations:

Management expects to provide value added, cost effective plans that are competitive and assist in attracting and retaining a motivated work force.

Plans must be administered on an equal, fair, and non-discriminatory basis.

Under specific plan definitions or administrative options, an administrative committee, an actuarial firm, and an investment manager must be selected.

Human Resources aspects of DOE Contracts must be negotiated and approved before changes are made in specified areas. DOE guidance on the same or other specified areas may require unique processing or communication activities to include special reporting.

It is important to convey changes in benefit policies, procedures or practices to employees in a timely and effective manner. Such changes affect their perception of the value of their contributions and/or actual net income and they need the opportunity to understand and adjust to the changes. Effective communications can reduce the number of complaints to management or third parties, which would eliminate the need to respond to individual employee, customer and third party review challenges.

A determination needs to be made whether the plans will be administered by a third party or with company representatives.

Consideration should be given to developing and implementing an effective office safety program.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

Changes in state and federal laws or interpretation of such may require analyses, discussion, resolution, changes in policies and processes, and communications. DOE initiatives or changes in business philosophy or emphasis may also require the same or similar activities.

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

Plans are regulated by state and federal requirements and must be administered, communicated, and reported according to government regulations. New federal and state regulations and changes to existing laws have been numerous in recent years.

Public relations problems can exist when and if employee complaints about their eligibility and treatment are made to the media.

Section 1 - Work Activity:

Training programs are developed to ensure that employees possess the skills and knowledge necessary to perform their jobs in a safe, efficient, and effective manner. These programs cover the following areas: environmental, safety, health, safeguards and security; job skills; management training; instructor qualification; and general employee training. Training programs are designed to promote the safety and health of employees and ensure that operations do not adversely affect the public or the environment. The training methods include, but are not limited to: reading assignments, seminars, courses (classroom/laboratory), and on-the-job training. These programs are conducted by in-house training staff, instructor-qualified Subject Matter Experts (SMEs), and subcontractors.

Most training programs are developed and administered using a systematic approach that has proven to be successful for DOE moderate-risk operations such as nonreactor nuclear or high-explosive activities. The five distinct phases included in this approach are: Analysis, Design, Development, Implementation, and Evaluation.

Training needs assessments are conducted to determine employee-specific training requirements in support of line management. To accomplish this, assistance is provided to supervisors and managers to determine what knowledge and skills are required of individual employees to assure that they are qualified to perform their jobs. Additionally, training staff and subject matter expert instructors members attain special qualifications through Train the Trainer programs to ensure that they are competent in the presentation of course materials.

Work activity is initiated by one or more of the following means:

- A request for specific training to correct a skill or knowledge deficiency for a single employee or a category of workers;
- A training need identified by management to meet business priorities and objectives; or
- A requirement for training specified in an applicable law or statute.

There are on-going requirements to update training materials and to maintain an audit trail documenting these changes. It is imperative that as job functions and regulatory directives change, there is a process in place to ensure these changes are captured and incorporated into the appropriate training programs.

The majority of the activity ends when the employee is trained and the records are filed to document the training. Original attendance records are filed in a central location; recorded in a training records database file; and maintained according to standards identified WBS 1.5.1, "Records and Document Management."

Section 2 - Hazards and Management Issues:

For the standard classroom training, no unique hazards exist beyond those normally encountered in an office environment. Skills classes such as forklift training, however, that combine classroom and workplace performance activities in which injury could occur if improperly conducted, do inherently carry certain risks. Hazards associated with the delivery of on-the-job (OJT) training range from minimal to moderate depending on the type of training being conducted and the controls used to mitigate potentially hazardous situations. Line management, safety

1.1.5 Training

Latest Revision: 8/12/02

professionals, and training staff review lesson plans to ensure that safety practices are included and are adhered to during the training sessions. Safety and health issues are given high priority when courses involve extensive field activities where instructors and students engage in closely-controlled exercises such as confined space entry, radiological and hazardous materials response, forklift safety, and crane operator training.

Potential liabilities may also be incurred for poorly designed training. In any job where the potential for an accident or injury exists, it is imperative that the employee be qualified to perform that job (e.g., possess the knowledge and skills necessary to do the work). Of equal importance is maintenance of job analysis data, course materials, and attendance records. Failure to maintain such documents makes it hard to prove appropriate training was completed.

Section 3 - Standards:

Standard	Title
DOE Handbook 1074-95	Alternative Systematic Approaches to Training, January 1995
<i>Note See BCR 2001-016.</i>	
DOE Handbook 1078-94	Training Program Handbook, A Systematic Approach to Training (SAT), August 1994
<i>Note See BCR 2001-016.</i>	

Section 4 - Measurement Parameters:

A training assessment evaluation/performance checklist uses specific criteria derived from a combination of the above-mentioned documents to assess the overall quality of the training program. The Bechtel Nevada training program is also evaluated against specific performance measures that are stated in an Annual Training Plan submitted to DOE/NV.

Cost per student per week of training.

Section 5 - Implementation Considerations:

As the mission at the Nevada Test Site changes, new skills are required of the workforce. Training and qualification programs will have to be developed according to the referenced standards and approved by the appropriate line/functional manager.

Section 6 - Work Environment:

OJT is conducted at individual work sites at all locations. Potentially hazardous OJT situations need to be addressed and mitigated before the beginning of the session.

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

Contractor management and DOE could be held liable if mandated training is not provided, if employees are not qualified to perform their jobs, or if training is improperly designed or administered. When work-related accidents or incidents occur, one of the first areas examined is the qualification of the employee(s). If the employee(s) involved does not possess the necessary skills and knowledge to properly and safely perform their job, work operations could be stopped, management could be fined, or in cases of injury, management could be held legally liable.

Section 1 - Work Activity:

This package refers to those individuals not previously discussed under WBS 1.1.2 "Employee Relations" which includes workers who are covered under the collective bargaining agreements who are not permanent, full-time employees of the organizations as well as some workers, typically crafts, who are employees of the organization and are represented by a union. The collective bargaining, grievance, arbitration, and dispute resolution activities described under the Employee Relations function of Labor Relations are unique to this activity.

The following activities are associated with the Employment function of Labor Relations:

- The hiring and termination of craft employees who are employed under the provisions of any of the numerous construction and/or maintenance and operation project labor agreements is dependent upon the coordination of both of the following activities:
- Employment which includes the direction and coordination of the hiring process, including employment forms, and the administration of medical screening and security in-processing.
- Termination which includes the direction and coordination of the termination process, including exit interviews, and the administration of medical and security out-processing.
- An Outplacement Center is operated within the Human Resources organization in response to the requirement for government contractors to assist displaced workers affected by workforce restructuring events. Other outplacement activities include:
- Employment Assessment which involves coordinating with Human Resources to address any concerns of the employee regarding benefits under the "National Defense Authorization Act of FY 1993 - Section 3161" such as medical benefit continuation and educational benefits.
- Training/Retraining which involves coordinating with Training concerning funding that is provided by DOE to support educational assistance including counseling as well as administrative oversight of the application/reimbursement process.

The following work activities are associated with the Employee Relations function of Labor Relations:

- Collective Bargaining Activities which involves the timely negotiations of the numerous collectively bargained Project Labor Agreements, including the administration of these contracts during their term.
- Grievance and Arbitration Activities which involves administering the grievance procedures established under each Project Labor Agreement. The grievance process provides for unresolved issues to be referred to arbitration. This also involves ensuring that the firm's position regarding the facts of the grievance are adequately documented and presented at the arbitration hearing.
- Promote Resolution of Disputes which involves promoting the goal of no work stoppages; maintaining good

1.1.7 Labor Relations

Latest Revision: 11/30/04

relationships with the unions; implementing a training program for supervisors, foremen and general foremen; and designing and implementing a successful Work Assignment Dispute Resolution Process.

- Substance Abuse Activities which involves provisions for pre-employment and "for-cause" drug testing to maintain a safe work environment for employees. This also involves ensuring that the Employee Assistance Program and other services provided to non-bargaining employees are available to craft employees.

Section 2 - Hazards and Management Issues:

No unique hazards exist beyond those typically encountered in an office environment for most Labor Relations activities, however, some activities are conducted outdoors which may expose workers to typical risks associated with general construction areas.

Employment-related management issues involve application of the following initiatives:

- Assuring prompt response to the needs of requisitioning organizations.
- Assuring that the provisions of the project labor agreements are followed.

Termination-related management issues involve application of the following initiatives:

- Ensuring that information regarding potential employee dissatisfaction be communicated to the manager of the organization and to the Legal Office.
- Ensuring that educational assistance and other "National Defense Authorization Act of FY 1993 - Section 3161" benefits are administered properly.

The potential for negative impact exists if labor grievances are not resolved. Discord in the workplace could result in work stoppages. Failure to prevent such labor actions could result in a host of negative impacts including lost work opportunities, customer dissatisfaction, costly litigation, increased costs due to decreases in productivity, public relations problems, and possible fines or penalties.

Section 3 - Standards:

Standard	Title
Executive Order 11246	Equal Employment Opportunity
<i>Note Requires government contractors not to discriminate. Updated by BCR 2004-024, 9/15/04.</i>	
42 USC 2000e, et seq.	Equal Employment Opportunity
<i>Note Make Employment decisions without discriminating based on race, color, national origin, religion, or gender. Updated by BCR 2004-024, 9/1/04.</i>	
10 CFR 707	Workplace Substance Abuse Programs at DOE Sites

1.1.7 Labor Relations

Latest Revision: 11/30/04

Note Defines program content, processes, and Testing Designated Positions. Updated by BCR 2004-024, 9/15/04.

DOE O 350.1, CRD Contractor Human Resource Management Programs

Note Updated by BCR 2004-024, 9/15/04.

NLRB 102.48(a) National Labor Relations Board - Rules To Be Followed By Employers

Note Rules and regulations to be followed to avoid an unfair atmosphere that would prompt work stoppages. Updated by BCR 2004-024, 9/15/04.

29 USC 141, et seq. Labor Management Relations Act of 1947

Note Updated by BCR 2004-024, 9/15/04.

29 USC 206 Equal Pay Act

Note Requires that men and women be paid the same for doing equal work. Updated by BCR 2004-024, 9/15/04.

29 USC 621, et seq. Age Discrimination in Employment Act of 1967

Note Requires that employers not discriminate in pay due to age. Updated by BCR 2004-024, 9/15/04.

42 USC 12111, et seq. Americans with Disabilities Act (ADA)

Note Prohibits discrimination in hiring, firing, and terms and conditions of employment for people with disabilities. Updated by BCR 2004-024, 9/15/04.

42 USC 1981, et seq. Civil Rights Act of 1964

Note Guarantees equal rights for all. Updated by BCR 2004-024, 9/15/04.

42 USC 7274h DOE Defense Nuclear Facilities Workforce Restructuring Plan

Note Establishes preference in hiring. Updated by BCR 2004-024, 9/15/04.

29 USC 2601 Family and Medical Leave Act

Note Guarantees employee position during leave; notice and record keeping requirements. Updated by BCR 2004-024, 9/15/04.

5 USC 552a Privacy Act

Note Maintain confidentiality during investigations and of records resulting from investigations. Added by BCR 2004-024, 9/15/04.

18 USC 874 Copeland Anti-Kickback Act

Note Precludes employers from inducing an employee to give up part of the compensation to which he/she is entitled. Added by BCR 2004-024, 9/15/04.

29 USC 201 Fair Labor Standards Act of 1938

Note Sets minimum wage and overtime pay standards and establishes record keeping requirements. Added by BCR 2004-024, 9/15/04.

1.1.7 Labor Relations

Latest Revision: 11/30/04

29 USC 701, et seq. Rehabilitation Act of 1973

Note Make employment decisions without discriminating based on disabilities. Added by BCR 2004-024, 9/15/04.

29 USC 2101 Worker Adjustment and Retraining Notification Act

Note Provides notice of layoffs and plant closures. Added by BCR 2004-024, 9/15/04.

38 USC 4212 Vietnam Era Veterans Readjustment Assistance Act of 1974

Note Defines how employers treat compensation for covered individuals. Added by BCR 2004-024, 9/15/04.

40 USC 276a, et seq. Davis-Bacon Act

Note Guarantees employees on federally funded construction projects prevailing wages. Added by BCR 2004-024, 9/15/04.

40 USC 327, et seq. Contract Work Hours and Safety Standards Act

Note Establishes maximum work hours and defines work hours and overtime. Added by BCR 2004-024, 9/15/04.

41 USC 35-45 Walsh-Healey Act

Note Regulates hours of work and wages of employees on federal contracts for the manufacturing or furnishing of goods, supplies, articles, or equipment. Added by BCR 2004-024, 9/15/04.

41 USC 351-358 Service Contract Act

Note Minimum wage law for employees providing a service under federal contracts and subcontracts. Added by BCR 2004-024, 9/15/04.

Section 4 - Measurement Parameters:

Employment/Outplacement Activities:

- The amount of time necessary to complete hiring of craft employees.
- Percent of displaced employees receiving or received educational assistance.

Collective Bargaining Activities:

- Number of agreements negotiated.
- Number of work stoppages.

Grievance and Arbitration Activities:

- Decline in the trend of formal grievances processed and referred to arbitration.

Dispute Resolution Activities:

1.1.7 Labor Relations

Latest Revision: 11/30/04

- Successful relationship with the Southern Nevada Labor Alliance and the alliance's Continuous Improvement Committees.

- A decline in the number of grievances/appeals submitted to the Work Assignment Dispute Resolution Process Panel.

Substance Abuse Activities:

- No work related accidents or incidents due to substance abuse.

- Decline in the trend of incidents associated with substance abuse.

Section 5 - Implementation Considerations:

An Alternative Dispute Resolution process is being instituted, as an option to the traditional grievance/arbitration processes contained in the Project Labor Agreements, with the intent of minimizing the potential for work stoppages.

Section 6 - Work Environment:

Hazards associated with Labor Relations activities range from minimal to moderate depending on the type of work being performed and the controls being used to mitigate potentially hazardous situations.

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

The General Accounting (GA) area of the Finance functions involves the following activities:

- Cash management
- Accounts payable
- Accounts receivable
- Property accounting (plant & equipment)
- Payroll
- Tax accounting (federal, state & local)
- External reporting (balance sheet, income statement, etc.)

The fundamental purpose of this function is to provide DOE/NV accountability of organizational resources which must be managed in accordance with Generally Accepted Accounting Principles (GAAP). The primary objective is to produce and provide data to satisfy the following elements:

- Accurate and timely recording of all financial transactions.
- Tight control of all obligations within budget appropriations.
- Sufficient details supporting all transactions.
- Timely feedback of all financial reports (i.e., balance sheet, income statement, etc.).

Each of these activities fulfills an integral piece of the Financial Reporting process and each of them must be properly reconciled to the General Ledger and subsidiary records, as necessary, by activity. Essential activities include the following:

- Cash management activities include the timely collection of all cash (and equivalent) receipts, prompt deposit of all cash collections, strict disbursement methods, proper recording of all related transactions, maintaining detailed supporting documentation, and tight controls to effectively separate employee duties in related areas for proper safeguards and security. Where necessary, employees are required to be bonded to function in and/or around specific areas.
- Accounts payable activity includes the amounts owed for items received, services received, expenses incurred, assets acquired, construction performed, and amounts received but as yet unearned. Effort is made to record all liabilities in a timely and accurate manner. Accrued expenses are made against liability accounts before the actual

1.2.1 **General Accounting**

Latest Revision: 9/30/96

receipt of an invoice only when the goods and/or services have been received, but not yet billed. Matching expenses against the period in which they are incurred is in line with GAAP. All recorded items are paid according to the letter of credit and Department of Treasury procedures.

· Accounts receivable activity involves the management of accounts receivable, loans receivable, and interagency/interfund receivables from the point of inception through the collection and/or writeoff. Separate accounts are maintained for each debtor. Monthly detail is produced to reflect aging of each account by category. Any direct billing or invoicing to debtors is completed monthly.

· Property accounting (plant & equipment) includes any piece of real or personal property that is acquired through a purchase, is received from another Interagency transfer, is retired from use, is excessed from use, and/or is sold. Thresholds have been established to distinguish between real and personal capital property for additional reporting requirements. Capital property becomes eligible for depreciation (tangible) and/or amortization (intangible). Service life data is maintained to properly calculate depreciation/amortization amounts.

· Payroll labor activities are a key element to financial reporting records in that their accurate, timely capture on a direct or indirect labor basis is critical in the establishment of other related functions.

· Tax accounting activity involves, as with any business entity, the requirement to pay federal, state, and local taxes as a part of routine procedures. A variety of taxes are paid, including employment taxes, sales/use taxes, property taxes, business taxes, and fuel taxes, among others.

· External reporting activity is a result of timely and accurate recording of financial transactions throughout the previously mentioned systems. The Balance Sheet, Income Statement, and other financial statements are produced as needed, which may vary monthly, quarterly, and/or annually.

Section 2 - Hazards and Management Issues:

No unique hazards exist beyond a normal office environment.

A breakdown in the accounting system would lead to the failure to pay subcontractors and vendors. If this were to occur, arrangements would need to be made to pay subcontractors and vendors through other methods, while not relying on the accounting system.

The primary management issues surrounding GA activities is that since most financial reports originate from this area, data reliability is crucial. In accordance with GAAP, this data must be useful. This occurs when it is timely, relevant, reliable, cost beneficial, material, comparable, and consistent. Implications associated with non-performance may include any of the following:

- Improper costing and reliability of potential funding violations.
- Improper reporting of Assets, Liabilities, and Equity.
- Improper recognition of Income and expenses.
- Improper tax liabilities to Federal, State, and Local entities.
- Improper data to make effective decision making.

1.2.1 General Accounting

Latest Revision: 9/30/96

Section 3 - Standards:

Standard	Title
29 CFR 516	Records to be Kept by Employers
<i>Note</i>	<i>Requirements for Payroll.</i>
29 CFR 548	Authorization of Established Rates for Computing Overtime Pay
<i>Note</i>	<i>Requirements for Payroll.</i>
29 CFR 785	Hours Worked
<i>Note</i>	<i>Requirements for Payroll.</i>
31 USC 1801, et seq.	Prompt Payment Act
<i>Note</i>	
48 CFR 52	Solicitation Provisions and Contract Clauses
<i>Note</i>	
48 CFR 932.9	Prompt Payment
<i>Note</i>	<i>Prompt payment requirements for response to accounts payable.</i>
48 CFR 9904	Cost Accounting Standards (CAS)
<i>Note</i>	<i>The CAS is generally required. The following specific citations were in effect at the time of identifying the N&S set: 9904.401 - Consistency in Estimating, Accumulating & Reporting Costs, 9904.402 - Consistency in Allocating Costs for the Same Purpose, 9904.403 - Allocation of Home Office Expenses to Segments, 9904.405 - Accounting for Unallowable Costs, 9904.406 - Cost Accounting Period, 9904.408 - Accounting for Cost of Compensated Personal Absence, and 9904.418 - Allocation of Direct and Indirect Costs.</i>
DOE O 534.1, CRD	Accounting
<i>Note</i>	
Federal Tax Statutes, State Tax Laws, and Union Agreements for Taxes	Federal Tax Statutes, State Tax Laws, and Union Agreements for taxes
<i>Note</i>	<i>Requirements for taxes.</i>
Financial Accounting Standards Board's Generally Accepted Accounting Principles (GAAP)	Generally Accepted Accounting Principles (GAAP)
<i>Note</i>	

1.2.1 General Accounting

Latest Revision: 9/30/96

General Accounting Office (GAO) Policy and Procedures Manual for Guidance of Federal Agencies, Title 2 Accounting

Note

General Accounting Office (GAO) Policy and Procedures Manual for Guidance of Federal Agencies, Title 6 Pay and Leave

Note

General Accounting Office (GAO) Policy and Procedures Manual for Guidance of Federal Agencies, Title 7 Fiscal Requirements

Note

Office of Management and Budget (OMB) Circular A-127 Internal Control Systems

Note *Addresses external reporting requirements.*

Section 4 - Measurement Parameters:

Measurement parameters for the GA function can be summarized into the following areas:

Timely

The information collected must be able to be reported in a timely manner. The timeliness of the data is a function of the system's ability to capture and report the data. A proper mix of qualified personnel and computer resources must exist to be processed in a timely fashion.

Reliable

Safeguards, such as well-defined Internal Controls, must be in place to ensure integrity of the data collected and reported. A "separation of duties" in personnel responsibilities such as the separation of functions of receiving, posting, and processing cash should be implemented. In some cases, it may be necessary to have certain personnel bonded for additional security.

Valid

The ability to "audit" data should be understood as a matter of validation. Each part of the validation process must trace back to source data.

Benchmark

The following indicators/measures were taken from the "Detailed CFO Performance Goals, Objectives and Measures:"

Indicator:

- Accounts receivable delinquencies are minimized

- Number and dollar amount of receivables more than 120 days delinquent as a percent of total receivables.
- Commercial payments and other cash transactions are made in a timely, efficient and cost effective manner
- Number and dollar amount of penalties paid on late commercial payments.
- Number and dollar amounts of lost discounts on commercial payments as a percent of cost beneficial discounts offered.
- Cash management processes are improved, OMB initiatives such as use of electronic funds transfer are supported, and non-value added activities are reduced
- Number and dollar value of payments accomplished via EFT as a percent of total payments.
- Financial statements are reliable
- Number of qualified opinions or disclaimers on Audited Financial Statements.
- Number of significant Audited Financial Statement deficiencies noted in core areas.
- Financial reports are accurate and timely
- Days early/late in submitting selected external reports.
- Financial data is recorded promptly, consistently and accurately
- Number and Dollar Amount of payroll and other suspense items over 60 days old.
- Number and percent of Departmental Inventory Management System (DIMS) submissions which agree with FIS control numbers & days early/late in submitting quarterly data.
- Financial management controls safeguard against fraud, waste, and abuse
- Number of new and repeat Inspector General findings related to the Management Control Program.
- Number of new and repeat Inspector General audit findings in the area of financial management.
- Adverse audit findings are minimized
- Number of needed improvements disclosed through business management system reviews and "For Cause" reviews.

- Performance measures adequately support financial management goals and objectives
- Number and percent of reliable self-assessments.
- Number and percent of performance goals successfully achieved.
- Customer Orientation, Human Resources, Full Partnership
- Customer suggestions/requirements are addressed
- Percentage of commercial payments made on-time.

Section 5 - Implementation Considerations:

There are no specific implementation considerations associated with activities of the GA function.

Consideration should be given to developing and implementing an effective office safety program.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

Vulnerabilities exist that would result from erroneous data. In the event that costs exceeded obligation funding, violations will be imputed and carried out in the form of penalties.

Section 1 - Work Activity:

This work activity covers the provision of cost accounting services to DOE, DOE/NV contractors and their management, as well as the national laboratories consistent with applicable requirements. The services provided include the following:

- Implementation of sufficient and effective financial procedures, processes and systems. These procedures, processes, and systems assemble and categorize information that is current, complete, and accurate and that conform to cost accounting regulations.
- Ensure that non-contract efforts undertaken are properly identified, accounted for, funded, and adequately disclosed to DOE.
- Manage the accounting for actual costs incurred during contract performance.
- Ensure charging practices are in compliance with the disclosure statement.
- Develop and monitor methods of indirect cost allocation to accomplish full cost recovery.

Core deliverables associated with the Cost Accounting work activity include the following:

- Provide effective cost accounting support to management and DOE.
- Develop policies and procedures that will strengthen cost accounting practices.
- Exercise due diligence using systems to properly manage cost accounting activities.
- Apply oversight responsibility for ensuring compliance with DOE Orders. Oversight will include the development and application of internal controls for cost accounting systems.
- Establish indirect cost rates in accordance with the Financial Management System Improvement Council (FMSIC) cost model and DOE/NV Chief Financial Officer (CFO) guidance.
- Ensure that indirect costs are properly monitored to minimize variances and that maximum funds are available for direct program use.
- Assist DOE/NV by providing data and other cost accounting information needed as a result of DOE/NV or other special requests.
- Ensure adequacy of Cost Accounting Reports:

* Comply with the policies, procedures, and practices, both manual and automated, to formally communicate proprietary cost accounting information regarding past, current, and future events in support of DOE programs to

both internal and external groups.

- * Provide cost accounting reports free of errors or omissions.
- * Establish appropriate systems, procedures, and reports which provide cost performance measurement data.
- * Manage and account for indirect cost rates to accomplish full cost recovery.
- * Maintain current funding balances in the job cost system.
- Review cost accounting systems and procedures for areas where enhancement and improvements can be made.
- Formally request DOE/NV Financial Services Division approval of all proposed changes to financial systems, accounting and budgeting policies and procedures, particularly those relating to cost accounting and distribution as reflected in the current Cost Accounting Disclosure Statement.
- Provide full disclosure of financial activities.
- Submit cost accounting reports by the due date which meet content and format requirements. Prepare recurring and special financial reports in a consistent manner which are supported by adequate documentation. Financial report data must be verifiable, auditable, and traceable. Distribute cost accounting reports to appropriate program management review to ensure reasonableness and consistency.
- Continue developing performance measurement parameters and indicators for cost accounting.
- Monitor distribution pool and recharge rates to ensure equitable charges and minimum annual variances.
- Ensure labor load computations are made in a way that minimal changes are needed throughout the year.
- Establish adequate audit trails.
- Establish a fair and equitable cost distribution system with allocable costs reflected in financial reports properly charged to benefiting final cost objectives within DOE/NV policy guidelines.

Other Work Activities are interfaced with on a regular basis. Actual costs incurred are booked to the cost accounting system. Actual cost data is used by management for forecasting, tracking, and reporting costs (budget vs. actual) to DOE. The cost accounting organization, while responsible for oversight of the financial information within the cost accounting system, must rely on Project Management and Procurement processes to provide timely and accurate data to the system. Therefore, interfaces and effective coordination between Project Management, Procurement, Cost Accounting, and other organizational functions are critically important for ensuring timely and accurate data is available for management and DOE.

1.2.2 Cost Accounting (Financial Analysis)

Latest Revision: 11/30/04

Section 2 - Hazards and Management Issues:

There are no unique hazards other than those that exist within a normal office environment.

The primary management issues are financial impacts on the organization and DOE if the cost accounting process is not performed correctly. These would include:

- Not accounting for actual overhead and programmatic costs properly (e.g., timely and accurately). Cost overruns could occur (e.g., exceed congressionally mandated funding levels). FIS error inputs to DOE could also occur.
- Not maintaining or consistently applying overhead and recharge rates that are representative of the activity being managed. Major changes in overhead rates and large over/under distribution variances would negatively effect overhead and program management of fiscal operations.
- If either of the above mentioned circumstances occur, they could cause irreparable harm to the business entities goodwill, credibility, and image with DOE and/or customers.

Section 3 - Standards:

Standard	Title
10 CFR 708	DOE Contractor Employee Protection Program
<i>Note Requirements for processing of complaints by employees.</i>	
48 CFR 970.5204-59	Whistleblower Protection for Contractor Employees
<i>Note Requirements for regulation of waste, fraud, and abuse.</i>	
48 CFR 9904	Cost Accounting Standards (CAS)
<i>Note The CAS is generally required. The following specific citations were in effect at the time of identifying the N&S set: 9904.401 - Consistency in Estimating, Accumulating & Reporting Costs, 9904.402 - Consistency in Allocating Costs for the Same Purpose, 9904.405 - Accounting for Unallowable Costs, 9904.406 - Cost Accounting Period, and 9904.418 - Allocation of Direct and Indirect Costs.</i>	
Financial Accounting Standards Board's Generally Accepted Accounting Principles (GAAP)	Generally Accepted Accounting Principles (GAAP)
<i>Note</i>	
General Accounting Office (GAO) Policy and Procedures Manual for Guidance of Federal Agencies, Title 2	Accounting
<i>Note</i>	
Reporting System	Reporting System

1.2.2 Cost Accounting (Financial Analysis)

Latest Revision: 11/30/04

Note A Reporting System consistent with the following requirements: * Work Breakdown Structure - hierarchy of elements of the work effort, * Line Item Reporting - items required by the statement of work, * Cost Element Reporting - a subdivision of direct and indirect costs, * Organization/Labor Category Reporting - by organizational elements, * Construction Element Reporting - based on Title stages 1, 2, & 3, * Reporting by Budget & Reporting Number - if need for the work effort, and * Degree of Reporting Complexity - commensurate with magnitude and complexity of the work effort and the product.

DOE O 534.1B, CRD

Attachment 1 - DOE Chief Financial Officer's Accounting Handbook

Note Deleted DOE O 534.1 and added this, per BCR 2004-022, 9/15/04

Section 4 - Measurement Parameters:

The recommended measurement parameters for this activity are:

Accuracy will be measured by the number of errors per the monthly FIS submittal. An error is defined as a line item requiring DOE intervention for any reason, ranging from translation table edit errors to improperly recorded balances. The goal takes into account complications arising from conversion to a new consolidated cost accounting system.

Timeliness will be measured by the ratio of standard information submittals completed within deadline to the total number of required submittals. Standard information submittals are defined as the FIS input tape and reimbursable tape. Days early/late in issuing financial management reports and responses to request for information from DOE.

Findings in internal and external audit reports (internal control weaknesses, questionable costs).

Monitor overhead pool and recharge rates. Minimize magnitude and frequency of rate changes. Minimize the amount of over/under distributed cost variances.

The following additional indicators/measures were taken from the "Detailed CFO Performance Goals, Objectives and Measures" (Draft):

FINANCIAL STEWARDSHIP

Functional costs are appropriate in relation to total costs.

- Functional costs as a percent of total cost.

Contractor cost certifications reflect only allowable costs.

- Dollar amount of disallowed costs on Contractor "Statements of Cost Incurred and Claimed"

Financial practices are in conformance with approved disclosure statement.

- Number of significant Cost Accounting Standards non-compliance identified thru internal and external evaluations.

Financial statements are reliable.

- Number of qualified opinions or disclaimers on Audited Financial Statements resulting from contractor accounting data.

Financial reports are accurate and timely.

- Days early/late in submitting selected internal & external reports.

Financial data is recorded promptly, consistently and accurately.

- Number of significant Audited Financial Statement deficiencies noted in core areas related to the contractor's financial operation.

- Percent errors in initial monthly DISCAS/FIS submissions & days early/late in submitting the data.

- Number and percent of Departmental Inventory Management System (DIMS) submissions which agree with FIS control numbers & days early/late in submitting quarterly data.

Financial management controls safeguard against fraud, waste, and abuse.

Adverse audit findings are minimized. Performance measures adequately support financial management goals and objectives.

- Number of new and repeat Inspector General findings related to the Management Control Program.
- Number of new and repeat Inspector General and GAO audit findings in the area of financial management.
- Number of needed improvements disclosed through business management system reviews and "For Cause" reviews.
- Number and percent of reliable self-assessments.
- Number and percent of performance goals successfully achieved.

- Accounts receivable delinquencies are minimized.

- Number and dollar amount of receivables more than 120 days delinquent as a percent of total receivables.

CUSTOMER ORIENTATION

- Customers are satisfied with core financial services.
- Customer satisfaction ratings in core financial services.

Section 5 - Implementation Considerations:

DOE Order 1332.1A, "Uniform Reporting System," provides information that might be used as implementation guidance for developing a reporting system that meets the requirements described in Section 3 - Standards. Consideration should be given to developing and implementing a comprehensive office safety program.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

If overspending on any program exceeds obligation funding, DOE/NV and the contractor have exceeded legal limits established by Congress and the OMB. Violations of this type carry stiff legal penalties.

Section 1 - Work Activity:

This work activity covers the provision of special accounting services to DOE, DOE/NV, its contractors, and their management, as well as the national laboratories consistent with applicable requirements. Services provided include the following:

INTRA/INTER-AGENCY TRANSFERS

Work performed for other DOE contractor entities requires a documented scope of work; an identified performance schedule and deliverable(s); and a formal cost estimate consistent with that scope of work, performance schedule, and deliverable(s). DOE/NV Budget & Resources Management Division (BRMD) should receive certification of available funding from the authorizing entity or receive a cash order, not exceeding \$100,000, before the scope of work effort may proceed.

Work performed by other DOE contractor entities requires the same documentation. BRMD should receive certification of available funding from the authorizing entity. If no certification is available, a cash order not exceeding \$100,000 before scope of work effort is initiated.

PRODUCT AND SERVICE PRICING

Comprises the policies, procedures, and practices (both manual and automated) that are used to determine the cost of service and/or products furnished to others outside DOE so that full cost recovery is achieved.

Provide reasonable assurance that the product and service pricing process is in conformance with DOE requirements with all exceptions properly authorized and adequately justified, documented, and reported; that department-wide rates are consistently applied; and that biennial review of fees, royalties, rents and other charges for services and items of value provided, required by the Chief Financial Officers (CFOs) Act, is accurately and timely conducted and provides meaningful results and recommendations on revising those charges to reflect costs incurred in providing those services and things of value.

TRAVEL

The travel system comprises the policies, procedures, and practices (both manual and automated) for managing activities associated with permanent change of station, temporary duty, and local travel.

Provide reasonable assurance that the travel system includes adequate controls which ensure that all travel charged to the contract is in accordance with DOE and contract requirements; travel is properly authorized; travelers are reimbursed only for entitlements; and vouchers are processed in a timely manner.

REIMBURSABLE WORK

Reimbursable work refers to work or services performed or to be performed for another federal or nonfederal customer for which DOE is compensated by specific type of offsetting collection, known as a reimbursement, which may be credited as authorized by law to the appropriation or fund account of DOE. The reimbursable work or services performed by DOE are financed by funds of the ordering federal customer or by cash advances from a nonfederal customer.

1.2.3 Specialty Areas (Finance)

Latest Revision: 4/21/04

Provide reasonable assurance that reimbursable work being performed has been properly authorized, costed, and funded according to DOE requirements, which include ensuring that budgetary resources have been obtained before commencing work and incurring costs; that there is sufficient reimbursable obligational authority from the departmental CFO within the respective allotment; full cost recovery is achieved; costs do not exceed available funding; a system is in place to provide advance notification of potential funding shortfalls in sufficient time to obtain additional funding or begin orderly termination of the project; and work is managed and accounted for according to the funding limitations and other provisions of the reimbursable agreement.

RELATED PARTY TRANSACTIONS

Related party transactions include transactions between a contractor and its parent or subsidiaries of a common parent. Transactions between related parties commonly occur in the normal course of business. Transactions with related parties include purchases of supplies needed in connection with the performance of work and services received or furnished (i.e., accounting, management, engineering, and legal services). For services received, a request for contractor affiliated sources process is used. Contracting Officer approval of the contractor's fiscal year work plan showing the anticipated level of affiliate support and procedure is required prior to implementation.

Provide reasonable assurance that related party transactions have been identified, conform with DOE requirements, are appropriately authorized and approved, and are adequately disclosed.

The following work activities apply to the special areas/services listed above:

- Apply oversight responsibility for ensuring compliance with DOE Orders. Oversight will include the development and application of internal controls for special accounting areas.
- Assist DOE/NV by providing data and other cost accounting information needed as a result of DOE/NV or other special requests.
- Adequacy of reports - Comply with the policies, procedures, and practices, both manual and automated, to formally communicate proprietary accounting information about past, current, and future events in support of DOE programs to internal and external groups.

Section 2 - Hazards and Management Issues:

There are no unique hazards other than those that exist within a normal office environment.

The primary management issues are financial impacts on the organization and DOE if the accounting process is not performed correctly. Not accounting for actual costs properly (e.g., in a timely and accurate manner). FIS error inputs to DOE could also occur. The hazard would negatively effect financial management of the special areas within the Controller organization.

There is a significant financial liability if work is performed before the paperwork associated with funding the project is complete, and then for some reason funding is not executed.

1.2.3 Specialty Areas (Finance)

Latest Revision: 4/21/04

Section 3 - Standards:

Standard	Title
41 CFR 301	Travel Allowances
<i>Note</i>	
48 CFR 970.5204-59	Whistleblower Protection for Contractor Employees
<i>Note</i>	<i>Invokes 10 CFR 708 relative to waste, fraud, and abuse.</i>
48 CFR 9904	Cost Accounting Standards (CAS)
<i>Note</i>	<i>The CAS is generally required. The following specific citations were in effect at the time of identifying the N&S set: 9904.405 - Accounting for Unallowable Costs.</i>
DOE M 481.1-1A, Chg. 1	Reimbursable Work for Non-Federal Sponsors Process Manual
<i>Note</i>	<i>A, Chg.1 rev added by BCR 2003-034.</i>
DOE N 481.1A	Reimbursable Work for Department of Homeland Security
<i>Note</i>	<i>None.Added by BCR 2003-023.</i>
DOE O 2110.1A	Pricing of Departmental Materials and Services
<i>Note</i>	<i>Reimbursable Work (Work for Others)</i>
DOE O 481.1B, CRD	Work For Others (Non-Department of Energy Funded Work)
<i>Note</i>	<i>B revision added by BCR 2003-034.</i>
DOE O 534.1, CRD	Accounting
<i>Note</i>	
DOE O 551.1B, CRD	Official Foreign Travel
<i>Note</i>	<i>Replaces DOE O 551.1A, CRD per BCR 2004-004, 4/21/04</i>
Financial Accounting Standards Board's Generally Accepted Accounting Principles (GAAP)	Generally Accepted Accounting Principles (GAAP)
<i>Note</i>	
General Accounting Office (GAO) Policy and Procedures Manual for Guidance of Federal Agencies, Title 2	Accounting
<i>Note</i>	

1.2.3 *Specialty Areas (Finance)*

Latest Revision: 4/21/04

General Accounting Office (GAO) Policy
and Procedures Manual for Guidance of
Federal Agencies, Title 5

Federal Travel Regulations, Chapter 301 (GAO Title 5 Transportation)

Note *Travel requirements.*

NV O 481.1, Chg 1, CRD

WFO (Non-DOE Funded Work)

Note *Added by Change Request 2000-002, 3/15/2000. Updated by Change Request 2000-008, 09/06/2000.*

Section 4 - Measurement Parameters:

The recommended measurement parameters for this activity are:

Accuracy will be measured by the number of errors per submission/report.

Timeliness will be measured by the ratio of standard information submittals completed within deadline to the total number of required submittals.

The following additional indicators/measures were taken from the "Detailed CFO Performance Goals, Objectives and Measures" (Draft):

Indicator

Measure

Financial Stewardship

Contractor cost certifications reflect only allowable costs.

Dollar amount of disallowed costs on Contractor "Statements of Cost incurred and Claimed".

Financial practices are in conformance with approved disclosure statement.

Number of significant Cost Accounting Standards non-compliances identified thru internal and external evaluations.

Financial statements are reliable.

Number of qualified opinions or disclaimers on Audited Financial Statements resulting from contractor accounting data.

Financial data is recorded promptly, consistently and accurately.

Number of significant Audited Financial Statement deficiencies noted in core areas related to the contractor's financial operation.

1.2.3 ***Specialty Areas (Finance)***

Latest Revision: 4/21/04

Financial management controls safeguard against fraud, waste, and abuse.
Adverse audit findings are minimized.

Performance measures adequately support financial management goals and objectives.

Number of new and repeat Inspector General findings related to the Management Control Program.

Number of new and repeat Inspector General and GAO audit findings in the area of financial management.

Number of needed improvements disclosed through business management system reviews and "For Cause" reviews.

Number and percent of reliable self-assessments.

Number and percent of performance goals successfully achieved.

Customer Orientation

Customers are satisfied with core financial services.

Customer suggestions/requirements are addressed.

Customer satisfaction ratings in core financial services.

Average travel voucher processing cycle time.

Section 5 - Implementation Considerations:

Steps should be taken to minimize review and approval of plan details once the plan and its associated schedule and budget have been turned over to a project for execution.

DOE Orders 2030.4B and 2030.1C provide information that may be used as implementation guidance for reporting waste, fraud, and abuse.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

If program actual costs exceed obligation funding, DOE/NV and the contractor have exceeded legal limits established by congress and the OMB. Violations of this type carry significant legal penalties.

Section 1 - Work Activity:

The Budgeting work activity is comprised of two related, but distinct, elements; the DOE/HQ Unified Field Budget Call (UNICALL) and the regular budgeting process, detailed as follows:

The UNICALL is a significant work activity. New guidance concerning this process is issued annually by DOE/HQ, the Defense Programs Office, the Environmental Restoration and Waste Management (ERWM) Office, other DOE/HQ departmental offices, and DOE/NV. The entire UNICALL process is unique to the government, its agencies, and government contractors.

The bi-annual budget call, which is a planning tool, includes requests for Capital Equipment and General Plant Projects (GPP), as well as Operating Expenses. The basic budgeting process is separated into three distinct phases: Planning, Formulation, and Execution. Interfaces with other functional departments within the business entity occur frequently, as described below.

Commercial organizations usually have a marketing plan which determines overall advertising, production and spending levels. Within the DOE community, programmatic guidance occurs at the DOE/HQ and DOE/NV levels. This guidance determines production and spending levels. Current work scope input is obtained from all customers such as the national laboratories and the Yucca Mountain Site Characterization Office (YMP).

The first phase of the budget process, Planning, is performed to acquire and to validate work scopes which are obtained from DOE/NV programmatic officials, customers, and internal management. The following rates are also determined: Labor, Overhead, General & Administrative (G&A), Material, Transfers to/from other DOE/NV contractors, Capital Equipment, and projected GPP.

The second phase of the budget process, Formulation, is performed by pricing-out the budget. Specific guidance is obtained from DOE/HQ and DOE/NV relative to inflation rates, formats, due dates, and other input. The budget must be priced out using methods prescribed in the DOE Budget Formulation Handbook.

Customers and primary programmatic officials at DOE/NV often review budgets before they are presented to the DOE Resources Management Division (RMD) as a final product. Review occurs at several stages during the process (e.g., after work scope validation and the first price out). Reviews ensure that all guidance and input are considered when formulating the budget.

Budget validation, which usually takes place before the final product is submitted to RMD, is in most cases performed by personnel outside of budgeting since validation represents an independent review to ensure a quality product and one that conforms to all guidance provided by DOE/HQ, DOE/NV, company management, and customers.

The final phase of the budget process, Execution, occurs when programmatic work scope and the related funding are provided to the Contractor. This informal process involves DOE Program Cost Analysts, company budget personnel, and customers. Once a final work scope is agreed upon, organizational budgets are established and the differences between actual monthly costs and the budgeted amounts are measured in terms of variances.

1.2.6 Budgeting

Latest Revision: 9/30/96

Managers are usually responsible for explaining significant monthly variances. Program budgets are established in order to obtain adequate funding. Monthly budgeted costs are measured against actual costs to ensure that no overruns occur. The primary measurement vehicles are the Departmental Integrated Standardized Core Accounting System (DISCAS) monthly report versus the budget obligation and cost ceilings as reflected in the Approved Funding Program (AFP) issued by RMD. Integrated Management & Operating (M&O) Contractors use the Financial Information System (FIS) to transmit financial data to DOE/NV monthly using a program that translates the contractor's accounts into DOE's FIS accounts.

Budget obligation funding levels are established at Office of Management & Budget (OMB) and congressional levels and are legal funding limits that must not be exceeded. Cost ceilings are administrative levels established at DOE/NV and should also not be exceeded. Cost ceilings usually reflect full-year funding estimates where obligations may not be funded for a full year depending on circumstances.

The following Finance sub-elements have interfaces with the budgeting process:

1.2.1, General Accounting: The Generally Accepted Accounting Principles (GAAP) apply to the budgeting process; e.g., consistency and conservatism.

1.2.2, Cost Accounting: Cost Accounting Standards (CAS), such as allocating home office expenses, apply.

1.2.3, Special Areas: Each special area (reimbursable work for others, transfers to and from DOE/NV contractors, and travel costs) must be estimated in terms of work scope and associated cost estimates to be included in the budget.

Significant interfaces with other work activities or programs occur during the budget process. Customers are queried to determine work scopes; functional managers are asked to assess levels of personnel and Capital Equipment/GPP needs; DOE/NV programmatic officials provide input on work scope; and DOE/HQ provides inflation assumptions and formats for the final product.

It is difficult to clearly define boundaries between functional areas. The budgetary process generally relates to the planning, formulation, and execution of the budget while cost accounting, general accounting, and the special areas are cost reporting and asset/liability measurement tools.

Section 2 - Hazards and Management Issues:

There are no unique hazards beyond those expected of a normal office environment.

Management issues, which involve the financial impacts on the organization and DOE if the budget process is not performed correctly, include the following:

- Not properly pricing out the budget and, therefore, not securing enough (or too much) funding. This may cause a funding violation to occur because costs exceed funding or too much funding may be secured for a program causing a shortage elsewhere.
- Not adequately measuring work scope and, therefore, not having enough (or too much) resources; e.g., personnel, equipment, and GPP items (buildings and other facilities). If not enough resources are secured then work scope may not be completed or too many resources may be secured causing excess costs and a shortage in

1.2.6 Budgeting

Latest Revision: 9/30/96

other areas.

If either of the above occurs, this could cause irreparable harm to the business entities goodwill, credibility, and image with DOE and/or customers. For example, if not enough funding is secured, significant portions of work scope may not be completed.

Section 3 - Standards:

Standard

Title

48 CFR 9904

Cost Accounting Standards (CAS)

Note *The CAS is generally required. The following specific citations were in effect at the time of identifying the N&S set: 9904.401 - Consistency in Estimating, Accumulating & Reporting Costs, 9904.402 - Consistency in Allocating Costs for the Same Purpose, 9904.403 - Allocation of Home Office Expenses to Business Segments, 9904.404 - Capitalization of Tangible Capital Assets, 9904.407 - Use of Standard Cost for Direct Material and Direct Labor, 9904.409 - Depreciation of Tangible Capital Assets, 9904.410 - Allocation of Business Unit General and Administrative Expenses, 9904.411 - Accounting for Acquisition Costs of Material, 9904.412 - Composition and Measurement of Pension Costs, 9904.413 - Adjustment and Allocation of Pension Costs, 9904.414 - Cost of Money as and Element of the Cost of Facilities Capital, 9904.415 - Accounting for the Cost of Deferred Compensation, 9904.416 - Accounting for Insurance Costs, 9904.417 - Cost of Money as an Element of the Costs of Capital Assets, 9904.418 - Allocation of Direct and Indirect Costs, and 9904.420 - Accounting for Independent Research and Development Costs and Bid and Proposal Costs.*

DOE O 130.1, CRD

Attachment 1 - Budget Formulation Process

Note *If the Budget Formulation Handbook, DOE/NV, and DOE/HQ budget guidance, as well as DOE Order 130.1, "Budget Formulation Process" are followed, then the hazards noted above will be mitigated and the work will be accomplished in a cost-effective and efficient manner. The guidance provided by DOE/HQ is to ensure that they respond to OMB and requirements under OMB Circular A-11.*

Financial Accounting Standards Board's
Generally Accepted Accounting Principles
(GAAP)

Generally Accepted Accounting Principles (GAAP)

Note *Some GAAP apply, such as consistency, conservatism, checks and balances, and internal controls or separation of duties. Consistency is maintained by building the budget using the same structure the business entity uses for reporting costs. Accounting and budgeting personnel must always be conservative in estimates so that adequate funding may be secured to accomplish all identified work scope yet not include too much management reserve.*

Office of Management and Budget (OMB)
Circular A-11

Preparation and Submission of Budget Estimates

Note

Section 4 - Measurement Parameters:

FINANCIAL STEWARDSHIP

Objective 4: To ensure quality budget formulation and effective budget execution.

INDICATORS/MEASURES:

- Uncosted/unobligated balances are appropriate and understood by appropriation.
- Uncosted/unobligated balances as a percent of total obligational authority.
- Budget estimates are optimized and approved funding is used appropriately.
- Days early/late in meeting critical milestones.
- Timely guidance is provided for meeting critical budget milestones.
- Average deobligation cycle time.
- Budgets are submitted in accordance with CFO Budget Call requirements.
- Average Approved Funding Program (AFP) processing cycle time.
- Budget are effectively planned and executed with established funding levels.
- Programs do not experience funding disruptions.

Other measurement parameters that could be used are labor hours and material dollars compared to last year on the same program and department. A whole host of other cost categories can be monitored, e.g., travel costs, professional services et. al. Variances should be justified in writing to senior management and/or customers.

Another measurement parameter that could be used during the formulation phase is that an approved pricing system was followed. This could be validated in the Budget Validation review.

Other measurement parameters that could be used during the execution phase are number and percent of variances between budgeted program costs and actual costs and budgeted departmental costs and actual costs. Another parametric measure is DOE/NV's budget authority funding violations report in terms of the number of violations and percent of dollar violations.

Additional parameters could be developed using each individual CAS and the OMB Circulars.

More parametric measures could compare budgeted overtime costs by department versus actual cost, personnel turnover and additional financial variances on high dollar areas. Since tremendous down sizing has occurred in the commercial world, the "80/20" principle is followed in tracking large dollar items and in many other areas. Briefly, this principle states that 20 percent of any list of data contains 80 percent of the cost (or quantity); therefore, concentrate on tracking, controlling and monitoring that 20 percent because that's where the big dollars are. For

example, 20 percent of accounts receivable customers owe 80 percent of the outstanding balances; therefore concentrate collection and tracking efforts on those 20 percent and you will greatly improve cash flow by reducing late payments. This principle can be used in many areas of any business entity.

Section 5 - Implementation Considerations:

The yearly submittal of the DOE/HQ Unified Field Budget Call (UNICALL) is a major job task. DOE Order 130.1, Budget Formulation Process, establishes the UNICALL process and defines the roles and responsibilities of the Headquarters and Field Elements participating. Every year new guidance is issued by DOE Headquarters, the Defense Programs Office, The Environmental Restoration and Waste Management (ERWM) Office, other DOE/HQ Departmental Offices and DOE/NV concerning this process. Guidance provided is over 500 pages. Additional guidance is provided in the Field Section of the DOE Budget Handbook issued by the Chief Financial Officer. The entire UNICALL process is very unique to DOE.

The other GAAP and CAS principles not listed in Section 3 - Standards, are useful implementation guidance because, taken as a whole, they guide toward correct action in every phase of Corporate general and cost accounting which impacts upon the budgeting process in terms of proper accumulation, categorization and summarization of expense versus sales as shown on the Income Statement and Asset Versus Liability as shown on the Balance Sheet. DOE Order 135.1 and OMB Circular A-34 are not strictly applicable to contractors, although they provide useful implementation guidance.

Every DOE contractor should be required to implement some type of monthly budget versus cost reports for both programs and departments. This would ensure that no violations appear on the DOE/RMD AFP budget authority report and that individual departments are properly sized to accomplish work scope.

Additional reports should be in place to measure monthly budget versus actual costs for significant other budgetary elements, e.g., overhead categories, overtime, pension, medical costs et. al.

A detailed technical (schedule) planning and control system should be in place at contractors involved in construction and manufacturing. This system should measure cost versus schedule, similar to the WADS/WACS system.

In terms of priority, a broad measure as suggested in the first paragraph is absolutely essential to establish control over program and departmental costs. The budget represents the planning tool while actual costs versus budgeted costs represent controls over costs at appropriate levels of the organization. Next in priority, and very close to cost control, is technical (schedule) control and schedule versus cost control. Each project is different and detailed planning needs to be performed so that an accurate cost and schedule profile is constructed for all major projects. The "80/20" principle can be used with great effectiveness in this area.

Impacts, with most contractors, would probably be minimal in modifying the current work process to perform these implementation considerations. All the data already exists. A detailed system of measurement, reporting and corrective action implementation would have to be constructed to achieve these recommendations. Many organizations already perform these functions in one form or another.

Few changes would be necessary in other processes to support the changes proposed here. Changes may be

1.2.6 Budgeting

Latest Revision: 9/30/96

required in Information Systems reports to provide departmental and program costs and budget data but most Information System reports are already categorized by program and department so this would not represent a major implementation project. Changes in cost models may be necessary to ensure consistency.

Adherence to GAAP and CAS rules and most DOE Orders should flow down to major sub-contractors in a cost-effective fashion.

Consideration should be given to developing and implementing an effective office safety program.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

Budget personnel should be trained in all appropriate phases and sections of the DOE/HQ Budget Handbook, GAAP, CAS, the Federal Acquisition Regulations (FAR), Department of Energy Acquisition Regulations (DEAR) and applicable DOE Orders. Primary budget personnel should have four-year accounting degrees with some government finance/accounting experience.

Section 9 - Vulnerabilities:

If actual program costs exceed obligation funding, DOE/NV and the contractor have exceeded legal limits established by congress and the OMB. Such violations carry stiff legal penalties. If spending in excess of established work scope occurs on a politically sensitive program like the YMP, then significant political repercussions could occur.

Section 1 - Work Activity:

This work activity begins with receipt of a Purchasing Requisition (PR) which includes all necessary documentation to write the solicitation and make award, and includes the following supplementary material, as applicable.

- A sole source justification,
- Packaging requirements,
- Statement of work revealing requirement for Foreign Ownership, Control or influence of Contractor (FOCI) and/or an Organizational Conflict of Interest (OCI),
- Specifications, drawings, and other miscellaneous documentation,
- Technical evaluation criteria,
- Quality requirements,
- Safety requirements,
- Flow-down of facility or site requirements,
- Government furnished material or equipment,
- Independent Cost Estimates and/or Basis of Estimates.

The procurement work activity begins when the user is consulted to determine whether acquisition planning documents forecast procurement activities. With receipt of the PR submitted by the user, the bidder's list is compiled, the solicitation including all required flowdown clauses and orders is prepared and released, proposals are received and evaluated, and the contractual document is written and awarded. Some procurements require a technical evaluation to ensure capability of performing the job or providing the correct product, an audit of prices to ensure prices are allowable and allocable, and a quality review of the firm if the item or service must be purchased from an approved vendor. Expeditors ensure the item is received on time; administrators ensure the service or construction project is progressing as ordered and government regulations are being followed. When all items are received or services are completed, the procurement action is closed-out and final payment is made

Purchases are varied and include services, commodities, one-time buys, and longer term "just-in-time" contracts. About 90 percent of all procurement actions are one-time purchase orders in the range of \$100,000 or less.

Section 2 - Hazards and Management Issues:

No unique hazards exist beyond a normal office environment.

The management issues related to this work activity are as follows:

The procurement work activity described here presumes that the operating entity possesses an approved purchasing system. DOE endorses a purchasing system through an audit process. At the start of any newly-awarded contract, and every three years thereafter, DOE will ensure that all rules and regulations are being followed and that goods and services are being purchased at a reasonable price. An approved procurement system allows the contractor to act without specific review or approval by DOE for all purchases up to a pre-established limit. Without this prior approval, all procurement actions would require DOE consent before award. Waiting for DOE consent would cause excessive delays and would impact work schedules.

Section 3 - Standards:

Non-procurement personnel may use credit cards to purchase most items under the micro-purchase threshold of \$4,500. Purchases under the micro-purchase threshold are exempt from procurement rules and regulations such as competition, set-asides, clauses (flow-down), etc. Certain items cannot be purchased by credit cards such as computers, hazardous materials, office furniture, or items available on just-in-time basis. The following are the necessary and sufficient set of standards selected for this work activity.

Standard**Title**

29 USC 793

Employment Under Federal Contracts

Note Applies to procurements over \$2,500.

41 CFR 101

Federal Property Management Regulations

Note

41 CFR 109

DOE Property Management Regulations

Note

41 USC 251

Federal Acquisition Streamlining Act (Public Law 103-355)

Note This law generically applies to the FAR and DEAR requirements, it gives leeway to implement best practices in lieu of department practices.

42 USC 10

Buy American Act Requirements (PL 103-182)

Note Applies to procurements over \$2,500.

48 CFR 23.5

Drug-Free Workplace

Note Requirements for a drug-free workplace. Applies to procurements over \$25,000.

48 CFR 25

Foreign Acquisition

Note Applies to procurements over \$2,500.

48 CFR 52

Solicitation Provisions and Contract Clauses

Note Requirements for Certifications and Representations. Applies to procurements over \$100,000. BCR 2003-030 increased the dollar amount.

48 CFR 52.222-13

Compliance with Davis-Bacon and Related Act Regulation

1.3.1 Procurement

Latest Revision: 11/30/04

Note Requirements for government construction. Applies to procurements over \$2,000.

48 CFR 52.222-26 Equal Opportunity

Note Requirements for Equal Employment Opportunity. Applies to procurements over \$2,500.

48 CFR 52.222-41 Service Contract Act, as Amended

Note Applies to procurements over \$2,500.

48 CFR 52.222-6 Davis-Bacon Act

Note Requirements for government construction. Applies to procurements over \$2,000.

48 CFR 6 Competition Requirements

Note Requires full and open competition. Applies to procurements over \$2,500.

48 CFR 9.4 Debarment, Suspension, and Ineligibility

Note Requires checking Debarred List. Applies to procurements over \$100,000.

48 CFR 9.5 Organizational Conflict and Consultant Conflicts of Interest

Note All Clauses apply to procurements in this category.

48 CFR 970.5101 Use of Government Supply Sources

Note Must purchase from government sources of supply. Applies to procurements over \$2,500.

48 CFR 970.52 DOE Contract Clauses for Managing and Operating Contractors

Note All Clauses apply to procurements in this category.

48 CFR 970.5204.44 Government Construction

Note

Executive Order 12829 National Industrial Security Program

Note Deals with foreign ownership, influence or control. All Clauses apply to procurements in this category. Per DOE/NV, they have not heard of a change in the near future for 10865. Executive Order 12829 states that it is revoking 1A and 1B of Executive Order 10865 as of Jan 6, 1993, though both orders are still currently in existence.

Executive Order 12845 Requiring Agencies to Purchase Energy Efficient Computer Equipment

Note Deals with purchasing computers. Applies to procurements over \$2,500.

Executive Order 12958 Classified National Security Information

Note Deals with foreign ownership, influence or control. All Clauses apply to procurements in this category.

48 CFR 19.5 Set-Asides for Small Business

Note Must set-aside for Small Business. Applies to procurements between \$50,001 and \$100,000.

48 CFR 22.8

Equal Employment Opportunity

Note *Equal Employment Opportunity. Applies to procurements over \$2,500, with the consent of the NNSA/NSO Contracting Officer. Note revised by BCR 2003-030.*

Executive Order 10865

Safeguarding Classified Information Within Industry

Note *Deals with foreign ownership, influence or control. All Clauses apply to procurements in this category. Per DOE/NV, they have not heard of a change in the near future for 10865. Executive Order 12829 states that it is revoking 1A and 1B of Executive Order 10865 as of Jan 6, 1993, though both orders are still currently in existence.*

Section 4 - Measurement Parameters:

The measurement parameters are as negotiated between BN Procurement and the NNSA/NSO Contracting Officer.

Section 5 - Implementation Considerations:

Many of the requirement standards placed on the procurement activity are derived from laws or regulations which cannot be set aside. However, under the Federal Acquisition Streamlining Act (FASA), Public Law 103-355, Department of Energy Regulations (DEARs) for maintenance and operations (M&O) contractors have been modified to allow the contractor to follow "best business practices" and then document the rationale for decisions made. It follows that the contractor should be allowed great flexibility in meeting requirements. For example:

- All orders over \$4,500 must be competed unless a valid sole source justification is received and approved. Instead: Allow the buyer to decide when to require sole source justification and when to compete. If a contractor has a published price list and items have been successfully purchased in the past through competition, let the next award be noncompetitive without a sole source document. Or if only a few contractors can supply an item and the requirement has been competed among them in the past, let the award be on a rotating basis whether the value is \$10,000 or \$100,000. Let the prime decide the threshold for competing and requiring a sole source justification.
- Public laws and regulations like the OCI must be rigidly followed for procurement. Instead: Let the contractor determine the best method to meet these requirements. Currently, DOE forms are used to document every step; from the requester, the subcontractor, and the buyer. The contractor should have the option to determine the best business practice to ascertain whether or not a conflict exists.
- DOE Order 470.1, "Identification & Protection of Unclassified Controlled Nuclear Information," states that except for DOE facilities and activities regulated by the Nuclear Regulatory Commission, FOCI applies to DOE and all DOE contractors. Instead: Contractors should be given the flexibility to determine if FOCI exists. Determinations could be made by following Air Force guidelines, a combination of DOE and other agency guidelines, or methods developed internally. Loral Aerospace (Air Force) and Bechtel San Diego (Navy) list the following clause in their terms & conditions: DFAR 252.209-7001, "Certification of Disclosure of Ownership or Control by Foreign Government that Supports Terrorism." The successful proposer must certify that they do not provide business for or are not owned by a foreign government that supports terrorism.
- The Federal Acquisition Regulations (FARs), DEARs, and the prime contract with DOE require many clauses and DOE Orders be flowed down to the subcontracts. Instead: The relationship between the prime and

subcontractor should be treated as a commercial transaction. Only clauses required by public law should flow down. The remaining clauses should be those the prime determines necessary to protect their interests, whether a government clause or one written by the prime.

Contractor procurement requirements include many clauses, including those which require that FOCI, OCI, and Department of Energy (DOE) Orders flow down to subcontractors. Because subcontractors may not be familiar with these clauses, they do not submit as many proposals. The inclusion of these clauses also increases the cost for the service because subcontractors charge more to cover unknown requirements that might emerge during subcontract performance. Internal operating costs are also increased because purchasing representatives spend more time conforming to DOE regulations, which increases costs to the user community.

Consideration should be given to developing and implementing an effective office safety program.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

An unapproved purchasing system would cause excessive delays and would impact work schedules.

Section 1 - Work Activity:

Total asset management provides for the management of government property throughout its entire life cycle beginning at acquisition and ending with final disposition. The specific scope of the total asset management function includes, but is not limited to, the following:

- . Maintain a total asset management program in conjunction with NNSA/NSO which facilitates, coordinates, and promotes the centralized visibility of all non nuclear materials in the inventory to include accountable property, chemicals, raw materials, metals, vehicles, and equipment, repair parts, precious metals, and scrap.
- . Administer a system which provides for accountability of both real and personal property assets to include acquiring, inventorying, asset location tracking, transferring, and disposing of individual property items.
- . Provide a system which provides for custodianship of individual property items.
- . Maintain a system for the administration of excess property to include the sale of surplus property.
- . Maintain an internal system that provides the prerequisite information to enable the appropriate property accounting of any property acquired through a purchase, received from another interagency transfer, retired from use, excessed from use, and/or sold. This includes retention of service life data to properly calculate depreciation, maintenance of acquisition cost information to support general accounting requirements and vendor/manufacturer information to support warranty or maintenance management purposes.
- . Manage a program administer and control high-risk property which is deemed high-risk due to being (a) nuclear-related; (b) proliferation-sensitive or export controlled; (c) chemically, biologically, or radiologically contaminated; (d) of national security/military interest; and (e) related to operations security matters.

Administrative and operational controls include, but are not limited to, identification, screening for excess, and disposal.

- . Conduct sales of surplus property and otherwise dispose of excess government-owned property including scrap.
- . Maintain precious metals control verification.
- . Conduct walk-through inspections to ensure proper use of government property according to applicable regulations and report the results of the inspections to NNSA/NSO.
- . Maintain a system for the requisition, receipt, inspection, storage, issue, and delivery of supplies.
- . Provide warehousing services to facilitate timely receipt, distribution, shipping, and stocking of materials.
- . Monitor the use of government property and supplies to ensure economical and efficient use.

. Develop and maintain total asset and property management procedures which facilitate compliance with applicable regulations.

Total asset management clearly includes activity commonly associated with inventory management, storage and distribution, property management supply, excess, and disposal operations to include the accountability of both real property assets (land and facilities) and personal property (all property other than real property). Total asset management may also embrace additional areas such as motor equipment management and the inventory tracking of materials such as chemicals and raw products.

Acquiring and managing real property includes among other things, the planning, conceptualization, design, construction, and acceptance by users of "capital projects" on facilities, utilities, equipment, and other similar work. A comprehensive and complete project management process such as the DOE order O 413.3 -- Program and Project Management for the Acquisition of Capital Assets (and related policies) dated October 13, 2000 for all projects regardless of funding sources are requirements that ensure that accountability, cost effectiveness, and responsibility can be maintained at all times. DOE Order 430.1B Real Property Asset Management defines requirements for real property asset management which include the requirements for a 10 year comprehensive site plan, a maintenance plan, use of a Facilities Information Management System, and configuration management.

Section 2 - Hazards and Management Issues:

No unique hazards exist that are different from operations normally found in both an office and field environment. High-risk property, however, has its own set of unique rules specific to high-risk.

The following management issues represent significant impacts if the total asset management function is not performed correctly:

. Improper use, transfer, disposal, or destruction of high-risk property may pose proliferation risks, create environmental, health, or safety hazards, violate export control laws, or otherwise cause considerable embarrassment to NNSA/NSO.

. Incorrect inventorying of items could create improper costing and/or reporting of assets, cause improper recognition of tax liabilities, and potentially lead to violation of various regulations and adverse publicity.

. Management has made the decision that personal property may be given as gifts, provided certain requirements are met, to educational institutions. This is in response to the NNSA/NSO's desire to foster the scientific and technical education of students.

. Use of a comprehensive documents like DOE Order O 413.3, CRD and NSO O 413.XA, CRD will facilitate risk reduction of the hazards normally associated with capital projects due to greater accountability and focus on these items. Use of DOE O 413.3 and NSO O 413.XA, CRD will eliminate confusion, duplication, inefficiencies, and establish firm accountability and responsibility throughout the organization's capital asset and construction project management activities.

1.3.6 Asset Management

Latest Revision: 1/26/05

Section 3 - Standards:

Standard	Title
15 CFR 730.3	Dual Use Exports
Note	<i>From: General Information of the Export Administration Regulations 15 CFR 730.</i>
29 CFR 1910 Subpart N	Materials Handling and Storage
Note	<i>Required for warehousing operations.</i>
41 CFR 101	Federal Property Management Regulations
Note	
41 CFR 109	DOE Property Management Regulations
Note	
48 CFR 945	Department of Energy Acquisition of Government Property
Note	
DOE Interim Guidelines on Export Control and Nonproliferation, November 3, 1994	DOE Interim Guidelines on Export Control and Nonproliferation
Note	
DOE Interim Policies for Control of High Risk Property, Revision 1, February 7, 1995	DOE Interim Policies for Control of High Risk Property
Note	
DOE O 413.3, CRD	Program and Project Management for the Acquisition of Capital Assets
Note	<i>Note updated by BCR 2004-035, 1/19/05. Added by Change Request 2002-002. This standard is implemented through NSO O 413.XA, CRD.</i>
NV O 44XD.1	Gifts of Personal Property In Support of Mathematics and Science Education
Note	<i>Added by Change Request 1999-001.</i>
DOE O 430.1B, CRD	Real Property Asset Management
Note	<i>Changed by BCR 2004-035, 1/19/05. This directive is also found in WBS Element 3.4, Facility Maintenance. It is included in this WBS in order to tie together all asset management, personal and real property in one document.</i>
DOE-STD-1120-98, Vol. 2	Integration of Environment, Safety and Health into Facility Disposition Activities
Note	<i>Changed by BCR 2004-035, 1/19/05.</i>

1.3.6 *Asset Management*

Latest Revision: 1/26/05

NSO O 413.XA, CRD

Project Management Principles and Practices

Note *Revision from NV O 413.X to NSO O 413.XA, CRD updated by BCR 2004-035, 1/19/05. Implements DOE O 413.3, CRD and DOE M 413.3-1, Project Management for the Acquisition of Capital Assets.*

Section 4 - Measurement Parameters:

The primary performance measurement for total asset management is continuously maintaining an approved property management system. Additional performance measurements are depicted in the following areas:

. Timely: Information contained within the property management system must be reported in a timely manner in order to effectively ensure property accountability and reporting into other business systems.

. Reliable: Controls and methods must exist to ensure integrity of the information contained in the property management system.

. Valid: There must be an audit/historical trail within the system which traces back to source data.

. Benchmark: Specific measures relating to the Total Asset Management operational function follow:

- Average cost to receive and deliver materials.
 - Average time to receive and deliver materials.
 - Number of significant deficiencies received on inspections and audits.
 - Number and percent of deficient self-assessments.
 - Number and percent of performance goals achieved.
 - Accuracy of inventory management system relative to number of items found during physical inventory compared to number of items on the record.
 - Quantity of loss, damage, and/or destroyed government property reports.
 - Number of inadvertent releases, transfers, or disposal of high-risk property.
 - Number of excess items and associated dollar value redeployed or surplus items donated per annum.
 - Number of surplus items and associated dollar value sold per annum.
- . Important measurement parameters are found throughout the 34-page DOE O 413.3 and NSO O 413.XA, CRD, but the overriding baselines in a capital project are scope, schedule, and cost.

Section 5 - Implementation Considerations:

The primary requirements placed on the total asset management function are derived from the standards depicted above in Section 3. The requirements of these standards have been implemented as requirements prerequisite to successful management of government property. The total asset management activity considers implementation of programs to achieve cost-effective management of assets to include, for example, cost benefits analysis, life cycle cost analyses, value engineering, and analysis of cost-to-hold assets versus sale or disposal of assets.

Section 6 - Work Environment:

The work environment is primarily an office setting. Field construction and visits to site locations may present greater potential hazards and risks and the need for use of personnel protective equipment.

Section 7 - Uncertainties or Issues:

DOE O 413.3 and NSO O 413.XA, CRD mitigate departmental uncertainties from the project management process to be used on DOE O 413.3 projects and designated activities. DOE O 413.3 and NSO O 413.XA, CRD provide for systems and controls which are typical of those used on large capital projects managed by private industry. Industry and government have similar expectation from such systems to receive major scope, schedule, and cost control benefits.

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

Information Services Management and Planning is comprised of the following activities:

End User Computing is facilitated by a systems support organization and is the distributed computing function responsible for support of desktop computers. End User Computing includes the following:

- Develop and implement configuration standards,
- Respond to software-related requests,
- Install and assist with software applications for off-the-shelf software packages.

Planning and Management of Computing Assets involves provision of technical systems management to both mainframe and minicomputer systems. This activity begins with analysis of requirements for computing resources at the data center level. Once requirements are identified for acquisition to the procurement process, and implementation, to include data center design and hardware and software installation, is planned. Follow-on activities include performance monitoring, tuning, layered applications support, capacity planning, and other duties. This activity covers all phases from initial identification of a requirement through the excessing of the equipment once it is obsolete or no longer required.

Networking involves the provision of communications network management support beginning with the analysis of requirements for data communications resources at the enterprise level. This activity includes data communications network design and installation. Once requirements are identified, specifications are written to satisfy the requirements and submitted to the procurement process. After the equipment is installed, follow-on activities include performance monitoring, tuning, capacity planning, and network management duties.

Software Management is focused on the acquisition, licensing, inventory, and disposition of commercial "shrink wrap" licensed software used on desktop workstations and network servers. A list of "standard" software packages is maintained based on the review of the baseline information architecture and short-range forecasts of future requirements. In conjunction with the General Counsel's office legal requirements and the policy on the licensing (with conditions of use) of commercial software are maintained. An automated inventory of acquired software is maintained on a company-wide basis. Excess software that meets "standards" is retained in a repository for redistribution. A list of software available for redeployment is maintained. Restrictions are place on obsolete software to prevent its redeployment.

ADP Maintenance/Support Agreement Management addresses ADP equipment maintenance agreements as well as software support agreements entered into with external vendors. While formal acquisition of such goods and services is within the purview of the Procurement Organization, the Information Services Organization provided the technical expertise and resources needed to ensure that the goods and services being acquired meet business requirements and are cost effective. This function involves the identification of the ADP maintenance/support agreements with external vendors and the determination when agreements can be consolidated or terminated. IT also involves coordination between Information Services and Procurement regarding new computing equipment or

software requiring maintenance agreements, and between Information Services and Property Management regarding the retirement of hardware/software under maintenance agreements.

Software applications development and maintenance is performed to help facilitate cost-effective, computer-based applications (i.e., development, acquisition, implementation, and maintenance); to assist clients with information technology planning; to identify requirements; and to provide a single point-of-contact for problem resolution and project coordination. Software applications activities include requirements management, software project planning, software project tracking and oversight, subcontract management, software quality assurance, and software configuration management.

The primary role of applications development is to support core business systems like finance, purchasing, human resources, payroll, and property. The scope also includes organizational and individual application development as well as support for areas such as environment, safety, and health.

Data is a critical resource that must be controlled and managed. Data management provides the specifications for naming conventions, structural definitions, validation checks, storage and access methods, data sharing, and data storage. Major data management sub-activities include data administration and database administration.

IS Management processes include those activities related to the planning, acquisition, development, operation, and maintenance of information systems. The process provides the continuous improvement of service to the customer, the maintenance of organizational and professional standards, and assurance that the work is performed in a cost effective, safe manner. This management function includes the development and publication of information services, policies, and procedures. Also included are administrative processes involving employee safety and health, environmental protection, general office support, development and monitoring of performance measures, conduct of management process, and IS personnel development.

Section 2 - Hazards and Management Issues:

Some support activities are governed by standards applicable to other functional areas that are being supported (e.g., generated records are handled according to "Records Management" standards).

Technological advances and programmatic changes require continual revisions to planning documents. Failure to document requirements could result in delays in obtaining funding to accomplish important initiatives or slow the procurement process.

Provisions need to be made to provide handicapped and non-handicapped employees equivalent access to information technology (i.e., computing) resources if possible.

Generally accepted measures must be taken to protect copyrighted software from unauthorized use or duplication according to manufacturers' agreements.

Data Center and networking resources require maintenance contracts and the facilities must be provided with sufficient power and air conditioning to support this equipment. This includes recovery plans in order to restore operations in the event of a disaster.

In addition to typical office hazards, unique risks include back injury from improper lifting of heavy materials such as computer hardware.

Unnecessary costs may be incurred if users purchase computer assets for a current platform or operating system if that particular platform or operating system is slated for future upgrades to software/hardware elements. Unless computer asset standardization is established, and a mechanism is put in place, which allows the oversight organization to review and approve purchase requisitions prior to their transmission to a procurement agent, upgrading outdated software and hardware will drive up program costs.

Management issues associated with software applications include: software attrition due to inadequate software inventory control and configuration management processes; cost of application changes related to process changes; determination of need an return on investment; use of commercial software versus custom development; multi-organizational impact due to application changes; and, data integrity concerns originating from the importation of data into the application, exporting data from the application, or due to data manipulation by the application.

The need for the successful teaming of the various technical disciplines (e.g., data database management, software development, server and network management, etc.) is also a management issue.

Section 3 - Standards:

The impact of the Information Technology Management Reform Act of 1996, which took effect August 8, 1996, has not been determined at this time.

Standard

Title

15 USC 7, Section 271 - 278g-3

National Institute of Standards and Technology

Note Added by BCR 1998-003.

Establishes NIST as the Federal focal point for developing standards and quality assurance practices for computer systems.

17 USC 1-215

Copyright Act

Note Added by BCR 1998-003.

Outlines the rights of owners and users of copyrighted software and provides sanctions for the infringement of a copyright.

18 USC 2319(b)

Criminal Penalties for software Copyright Infringement

Note Added by BCR 1998-003.

Establishes same.

29 USC 701, et seq.

Rehabilitation Act of 1973

Note Added by BCR 1998-003.

Section 508 (Public Law 99-506) FIRMR Amendment 14, Electronic Office Equipment Accessibility for Handicapped Employees (41 CFR Parts 201-1, 201-30, 201-32).

48 CFR 227.19

Commercial Computing Software

Note Policy for management of computing software.

48 CFR 72.4

Rights in Data and Copyright

Note Added by BCR 1998-003.

Used to establish contract performance requirements and delineate the rights and obligations of the Government and the contractor regarding data made available through contracts.

Department of Defense Directive (DoDD)
8320.1

Data Administration

Note Added by BCR 1998-003.

Federal Information Processing Standards
Publication (FIPS) 127-2

Database Language SQL

Note Added by BCR 1998-003.

Federal Property and Administrative
Services Act

Federal Property and Administrative Services Act of 1949

Note Added by BCR 1998-003.

"Section 111(d)" as amended by the Computer Security Act of 1987, Public Law 100-235

National Institute of Science & Technology
(NIST)

Generally Accepted Principals and Practices for Securing Information
Systems.

Note Added by BCR 1998-013.

Contains data management requirements.

Office of Management and Budget (OMB)
Circular A-130

Security of Federal Automated Information Resources

Note Appendix III added by BCR 1998-003.

Establishes policy for the management of federal information resources.

PL 104-106, Section 5001 - 5703

Information Technology Management Reform Act of 1996

Note Added by BCR 1998-003.

Repeals the 30 year old Brooks Act.

Software Engineering Institute (SEI)
SEI-93-TR-24

Capability Maturity Model for Software

Note Added by BCR 1998-003.

The software engineering model and key practices references are recommended by the Software Engineering Institute as necessary to produce repeatable, predictable results from software application development activities.

Software Engineering Institute (SEI)
SEI-93-TR-25

Key Practices of the Capability Maturity Model

Note Added by BCR 1998-003.

The software engineering model and key practices references are recommended by the Software Engineering Institute as necessary to produce repeatable, predictable results from software application development activities.

44 USC 3501

Paperwork Reduction Reauthorization Act

Note Added by BCR 1998-003.

Also its predecessor Public Law 96-511, The Paperwork Reduction Act of 1980, which establish a broad mandate for Agencies to perform their information activities in an economical manner.

Section 4 - Measurement Parameters:

Records Management: The efficacy of Information Services asset management can be measured in the accuracy of hardware and software inventory property records.

Handicap Access: Requests to accommodate a handicap, such as a visual impairment, will be responded to and closed within a reasonable period of time.

Copyrights: Random audits of installed software determine the effectiveness of the software management program in upholding software manufacturers' agreements.

Maintenance: The timeliness of annual maintenance reviews or support agreement renewals can be measured to ensure the resources support business requirements. The regular availability of the equipment once it has been installed to meet the needs of the business functions for which it was intended can also be measured.

Section 5 - Implementation Considerations:

Most Information Services work activities are covered using good business practices which depend on implementation of procurement and property management processes. Some information management projects are no longer the best business practice by the time they are implemented due to the length of the systems development life cycle.

There is a significant cost associated with ensuring that copyright laws are followed. The Software Publishers Association can impose fines and costs as a result of findings from an audit. These fines and costs may be less than the costs of the compliance effort depending on the violation.

Data Center and networking standards are derived from public laws or regulations that cannot be set aside. These activities must have current maintenance contracts to support the technical staff in performing their functions. This function also requires an experienced technical staff, which is capable of identifying business needs that can be satisfied by using information technologies in a cost effective manner. Training must be provided to the technical staff to remain current on these evolving technologies.

Consideration should be given to developing and implementing an effective office safety and safe lifting practices programs.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

The intent of software management is to minimize the potential for software copyright infringement, which would expose the company and employees to severe civil or criminal sanctions.

Section 1 - Work Activity:

Records Management has the functional responsibility to establish, implement, and manage a cost effective, fully compliant Records Management Program for unclassified documents. This program shall ensure that our customers have the necessary information, in a timely manner, to conduct business.

Document Control has the functional responsibility to establish methods and processes for controlling, distributing, tracking, retrieving, and acting as record copy holder for company documentation. These processes shall ensure that the appropriate revision of the document is utilized.

The basic Records and Document Management process is separated into three distinct phases: creation, maintenance and use, and disposition. The first phase is creation. The primary function of creation is to adequately document the organization, function, activity, and processes. The second phase is maintenance and use. Included within this phase is the protection, control, distribution, and retrieval of documents. The last phase of the Records and Document Management process is disposition. This includes long-term storage, turnover or transfer, archiving, and destruction of inactive documents. Interface and training with other functional areas occurs on a frequent or daily basis.

Under the Records Management program each functional area will identify a Records Coordinator/Document Control Coordinator to interface with the Records Management and Document Control staff.

Section 2 - Hazards and Management Issues:

No unique ES&H hazards exist beyond that of a normal office environment.

Management issues include functional areas not setting aside enough funds in their budget for their records and document management needs. This includes the needed space and the personnel necessary for distribution and control, preservation, and timely retrieval of documents. Relative to this is the decreasing budgets and undefined expanding volume of work coupled with the increasing requirements imposed upon records and document management. Failure to control documents can result in work being completed to old or incorrect requirements or standards and can result in rework, safety problems, or audit findings.

Section 3 - Standards:

Standard	Title
36 CFR Chapter 12 Parts 1220 - 1236	National Archives and Records Administration
<i>Note DIE G 1324.5B, Implementation Guide for use with 36 CFR Chapter XII - Subchapter B Records Management, will be used in conjunction with the above CFR for further interpretation and implementation of 36 CFR Chapter 12. Changed by BCR 2004-041, 1/19/05.</i>	
41 CFR 102, Parts 102 - 193	Creations, Maintenance, and Use of Records
<i>Note Records management issue; space, personnel & equipment; and budgets. Changed by BCR 2004-041, 1/19/05.</i>	

Section 4 - Measurement Parameters:

The following measurement parameters were selected as appropriate to the Records and Document Management processes as applicable:

- Over/under budget for meeting document and record management requirements.
- Days early/late in meeting document and record management milestones.
- Number and percent of deficient Performance Assessments.
- Number and percent of performance goals successfully achieved.
- Customer survey satisfaction ratings.

Section 5 - Implementation Considerations:

New document management and imaging systems should be evaluated to determine their usefulness and whether predicted budget levels will support this new technology. Consideration should be given to developing and implementing an effective office safety program that includes proper lifting techniques for boxes of records.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

The first issue is the receipt of directions to maintain documentation past its destruction date. The second issue is the uncertainty of the volume of documents to be maintained. These both will have impact on the availability of budget, space and personnel to properly manage them.

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

All organizational personnel are subject to fines/imprisonment from National Archives and Records Administration (NARA) for the unlawful destruction or taking of government documents. Both NARA and General Services Administration (GSA) may impose penalties and restrictions on agencies that do not follow records management requirements. Failure to provide timely retrievals of information could cause serious consequences.

Section 1 - Work Activity:

The NLV and NTS mail centers are operated and managed for the timely receipt, distribution, and processing of mail. The mail centers research and utilize the most economical United States Postal Service (USPS) postage rates and services and express mail services. All mail is processed with the most economical and efficient postal service available.

Q-cleared personnel hand carry certified and registered mail and classified material to/from WSI Security, located on Losee Road (Building C-1), to NNSA/NSO and other NLV facilities.

The administration of mail activities includes the development and management of mail run schedules and routes, the development and maintenance of mail stop logs, the maintenance of a master mail stop database, and the development of internal mail processing procedures to ensure compliance with USPS rates and standards.

All outgoing mail that requires postage is processed through a mail center. The post office box rental, bulk rate permit, and business reply permit are used to process mail. Mail routes and schedules are based on locations and mileage driven between mail stop locations.

The messenger/courier service picks up all incoming and outgoing mail and delivers it to the USPS, NNSA/NSO, BN, and government contractor agencies. Types of mail being processed include registered mail, certified mail, express mail, and U.S. Government Messenger Envelopes.

Section 2 - Hazards and Management Issues:

Mail bombs are a hazard unique to handling mail; therefore, there is an awareness of letter and package bombs and procedures for proper handling.

Suspect mail handling is also considered a hazardous condition and procedures are developed and reviewed to ensure proper and safe processing of the mail.

In addition to typical office hazards, unique risks include back injury from improper lifting of heavy materials, and the potential for exposure to hazardous materials when transporting blood borne boxes to and from the NTS.

The leased postage meter needs to be examined and validated once a year.

Section 3 - Standards:

Standard	Title
29 CFR 1910.1030	Blood Borne Pathogens
<i>Note Required to mitigate hazards associated with bloodborne pathogens.</i>	
U.S. Postal Service DMM Issue 58	Domestic Mail Manual
<i>Note Includes instructions for the mailing of hazardous materials. Updated by BCR 2004-033, 10/20/04.</i>	

1.5.3 ***Mail Services***

Latest Revision: 1/28/05

29 CFR 1910.132

Personal Protective Equipment, General Requirements

Note *Required to mitigate hazards associated with handling and mailing "blood boxes".*

Section 4 - Measurement Parameters:

The most economical postage rates are used.

Mail pickup and delivery schedules are met.

Customer satisfaction with handling operations.

Section 5 - Implementation Considerations:

Suspect mail handling and bomb awareness training are provided to new company and subcontractor employees.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

Print Plant capabilities cover a range of services including offset printing, duplicating, binding, stapling, folding, laminating, padding, color copying, as well as blueline and camera services. This work activity covers the printing plant at Mercury and the four duplicating centers at Losee Road, DOE, Remote Sensing Lab and the Control Point (CP) at Mercury.

The types of jobs requested vary greatly. Some are simple, one-step processes such as producing a few copies; others are very complex and involve coordination between various areas of the Print Plant. The complexity of the equipment also varies greatly. Jobs may require anything from hand binders and 30-year-old folding machines to highly sophisticated, computerized, multifunctional duplicating machines. Work includes both classified and unclassified printing and publishing, for which the standards are the same.

This activity begins with the receipt of a "Reproduction Work Request." The "Reproduction Work Request" can be submitted by DOE/NV, laboratories, contractors, and all other agencies. The request must be fully completed and include the number of copies required, whether the project is to be printed on one or two sides, the type of binding required, the type of paper to be used, the project's due date, and any other special services needed. When the requested work is complete, the job is returned to the customer.

Requests may also include printing a classified document which have the same standards as unclassified printing. The printing and publishing activities are the same for both types of materials. WBS 3.7, Industrial Security, addresses the security issues associated with printing and publishing.

Section 2 - Hazards and Management Issues:

There are several hazards associated with reproduction activities. Hazards can include injuries from using machinery, handling chemicals, and being exposed to waste materials, noise, and cleaning agents.

Copyright infringement is a management issue associated with the printing or reproduction of material prepared by employees of the complex.

Use of environmentally preferable products is mandated. These products may not always be preferred, in supply, or the most cost efficient for every job.

Manufacturers of printing and duplicating equipment provide specifications for use. It is the responsibility of the contractor to properly manage the equipment within that specified range. This may require performing some jobs "in house" and sending others to the Government Printing Office (GPO). Included in the management of duplication is the need to control the use of convenience copiers so that larger jobs are sent to the printing and duplicating centers. This ensures that the proper machine is used for each project.

Section 3 - Standards:

The hazards associated with printing and publication are not unique. Mitigation of safety and health risks can be accomplished with the following standards that are used in private industry. Hazardous waste is handled in accordance with the disposal regulations covered in WBS 4.5, "Environmental Protection Program."

1.5.4 *Printing and Publishing*

Latest Revision: 9/30/96

Standard

Title

17 USC 1-215

Copyright Act

Note

29 CFR 1910.1200

Hazard Communication

Note

29 CFR 1910.212

General Requirements of All Machines

Note

29 CFR 1910.95

Occupational Noise Exposure

Note

44 USC Chapter 5

Production and Procurement of Printing and Binding

Note

48 CFR 908.8

Acquisition of Printing and Related Supplies

Note

Executive Order 12873

Federal Acquisition, Recycling and Waste Prevention (November 1993)

Note Environmentally preferable products.

Government Printing and Binding
Regulations No. 26

Government Printing and Binding Regulations

Note Joint Committee on Printing requirements for management of equipment.

Manufacturers Recommendations for
Equipment Maintenance

Manufacturers Recommendations for Equipment Maintenance

Note

Section 4 - Measurement Parameters:

The recommended measurement parameters for this activity are:

Percent of jobs delivered on time compared to jobs delivered late.

Percentage of requests printed in the two-sided format to establish environmentally sound copying.

Percent of requests printed with recycled paper as per established guidelines.

Printing cost per unit to ensure a cost effective operation.

Section 5 - Implementation Considerations:

In order to fulfill "best business practices," the contractor should be given greater flexibility in meeting requirements. Several requirements stated in the Government Printing & Binding Regulations should be relaxed. For example:

· Standard: All requests of more than 25,000 impressions must be sent to the GPO for printing. Instead, set no limitations on contractor printing and duplicating. Allow the contractor to decide when to send jobs to the GPO. In some exceptional situations, time and money could be saved by using the GPO. The GPO functions primarily as a procurement entity. Substantial time could be saved by allowing the contractor to deal directly with GPO vendors. The GPO charges 6% for its services. DOE requires use of a credit card, which adds another 3%. The total cost to use the GPO with a credit card is 9%.

· Standard: The regulations on color printing from the Joint Committee on Printing must be rigidly adhered to. Instead, allow the contractor to determine how to best use color printing and copying. Out-of-date regulations on the use of color restrict the contractor in keeping up with company needs and national trends. The contractor should have the option to decide whether or not the cost of using color is justified.

The standards cited above are currently in use. Allowing the contractor to send jobs to local vendors would have several beneficial effects. Good will would be created between the contractor and the community. Job processing would be improved in a number of ways including better communication concerning the requirements of the job, increased ability to make corrections, and quicker turnaround time.

The Environmentally Sound Copying memorandum from Hazel R. O'Leary, dated April 22, 1994; this memorandum issues goals on two-sided copying and reemphasizes the government's commitment to ensure the use of recycled paper as stated in Executive Order 12873. It also urges the purchase/lease of machines with two-sided copying capability. In reference to the memorandum, DOE/NV requested schedules of compliance from contractors.

Section 6 - Work Environment:

All work is performed in a plant/shop environment.

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

This work activity covers the management of Scientific and Technical Information (STI) reporting for the purpose of optimizing the availability of useful information, sharing of information resources, and minimizing duplication of STI available elsewhere. Program/Project Managers must plan and budget for the production of STI products that may result from DOE-funded work. performed in their project or programmatic areas.

Additionally, the management of STI encompasses the requirements to protect information through control mechanisms to ensure that all STI products are reviewed for technical accuracy, to policy requirements, patent classification and unclassified sensitive information, and worldwide public releasability, STI products may also require specific copyright statements, disclaimers, credit lines, and other document control markings relevant to the sensitivity level of the product.

The DOE definition of STI is "Information" in any format or medium that is derived from scientific and technical studies, work, or investigations that relate to research, development, demonstration, and other specialized areas such as environment and health protection and waste management. Classified, declassified, and sensitive information is included in the scope of the definition.

Examples of STI product mediums covered in this activity are paper or electronic versions of technical reports (progress, topical, or final), abstracts, journal articles, books, computer media, scientific/technical audiovisual or multimedia, computer software, theses or dissertations, scientific/technical conference presentations, video reports, poster sessions, foreign trip reports, and symposium proceedings.

Section 2 - Hazards and Management Issues:

Hazards associated with work activity involving the management of STI products would be the risk of unauthorized release of sensitive information which would be detrimental to national interest. STI products are controlled by federal laws, rules, regulations, policies, and Executive Orders. Penalties from unauthorized dissemination range from fines, possible loss of government contracts, or prison sentences for deliberate offenders. WBS 3.7, Industrial Security, also addresses this concern.

DOE would be perceived by the public as an agency which is not being open if STI products are not made available to the public. If STI products are not reported as a result of taxpayers' dollars being allocated for research and development (R&D) projects, the taxpayer will not be receiving a return on their investment for these funded R&D projects.

The non-reporting of STI products could possibly result in a duplication of effort by other government agencies, laboratories, scientists, researchers, and U.S. industry if research is not shared. This would result in increased time and resources expended and unnecessary costs.

The safety and health hazards associated with this work activity are typical of those found in an office environment.

Section 3 - Standards:

1.5.5 Scientific and Technical Information

Latest Revision: 11/19/03

Standard

Title

10 CFR 605

Office of Energy Research Financial Assistance Program

Note

10 CFR 781

DOE Patent Licensing Regulation

Note

10 CFR 782

Claims for Patent and Copyright Infringement

Note

15 CFR 768

U.S. Import Certification and Delivery Verification Procedure

Note Regulation which defines and controls Export Controlled Information.

17 USC 702

Copyrights

Note

22 USC 2751, et seq.

Nuclear Nonproliferation and Arms Export Control Act

Note Statute which defines and controls arms and weapons related exports including.

32 CFR 2001

National Security Information

Note Classification authority.

35 USC

Patents

Note Law which protects unauthorized disclosure of patentable subject matter.

37 CFR 1

Patents

Note

42 USC 13201

Energy Policy Act (Public Law 102-486)

Note Requires the accelerated transition of technologies and protection of information resulting from research, development, demonstration, and commercial application activities.

42 USC 2161

Atomic Energy Act, as amended

Note Policy established the overall requirement that DOE disseminate its scientific and technical information to promote scientific and industrial progress and public understanding.

42 USC 2201, et seq.

Department of Energy Organization Act (Public Law 95-91)

Note Title 1, Section 102 - Requires DOE to disseminate the information resulting from its research and development programs.

48 CFR 927

Patents, Data, and Copyrights

Note

1.5.5 Scientific and Technical Information

Latest Revision: 11/19/03

48 CFR 952.227 Protection of Controlled Propriety Data From DOE Financial Assistance Agreements

Note Protection of controlled propriety data which arises from DOE financial assistance agreements.

5 USC 552 The Freedom of Information Act, as amended

Note 5 USC 552 (Public Laws 98-487 and 93-502), the Freedom of Information, as amended, establishes the right of citizens to request the information from Federal Agencies and establishes a framework of procedures to implement this right. Also establishes guidelines and regulations for exempting from public disclosure certain categories of information.

5 USC 552a Privacy Act

Note 5 USC 552 (Public Law 93-549), Privacy Act of 1974, as amended, established requirements for the collection, maintenance, and dissemination of personal information by Federal Agencies.

63 USC 15, Sections 3701-3715 Utilization of Federal Technology

Note

DOE O 241.1A, CRD Scientific and Technical Information Management

Note BCR 2003-040 replaced DOE O 1430.1D, CRD with DOE O 241.1A, CRD.

DOE O 5650.2B Identification of Classified Information

Note

Executive Order 12958 Classified National Security Information

Note Prescribes a uniform system for classifying, safeguarding, and declassifying national security information.

OMB Circular A-130 Security of Federal Automated Information Resources

Note Requires agencies to plan in an integrated manner for managing information through its life cycle, recognizing that open and efficient exchange of STI fosters excellence in scientific research and effective use of Federal R&D funds.

DOE G 241.1-1A Guide to Scientific and Technical Information Management

Note Only the parts specified as mandatory by DOE O 241.1A, CRD. BCR 2003-040 replaced DOE O 1430.1D-1 with G 241.1-1A.

Section 4 - Measurement Parameters:

Project Plans contain documentation that Scientific and Technical Information (STI) products resulting from the project are reported. STI planning, budgeting, generation (deliverables), use, and storage are stated in each Project Plan.

STI products are reviewed for technical accuracy, policy requirements, patent, classification and unclassified sensitive information, and worldwide public releasability. Appropriate document control markings are displayed on STI products based on sensitivity level/area of the product.

STI products are submitted to DOE/NV for review within a reasonable period of time to allow DOE/NV

reviewers adequate time for appropriate reviews before established publication dates.

STI products are forwarded to the DOE OSTI for dissemination within 30 days of DOE/NV approval of unlimited distribution documents. This is an approved means of making information available to a Wide audience.

The availability of STI to all customer segments, including DOE, U.S. industry, and the public will be maximized by developing implementation plans for electronic submission of STI to OSTI.

Length of turn-around time for review comments by any staff providing the security, patentability, or intellectual property reviews.

Section 5 - Implementation Considerations:

Due to the consolidation of three Management and Operating contractors into one, some transition time will be required to facilitate the management and processing of STI products. Some revisions to procedures may be necessary not only for the management of paper publishing of STI products, but the publishing of information on the World Wide Web.

The set of standards does not flow down to subcontractors.

Implementing documents include: (1) DOE Guide 1430.1-D-1, , Guide to the Management of Scientific and Technical Information, and (2) the NV Procedural Instructions (PI) 96-002, DOE/NV Internet Information Product Approval PI, which specifies implementing procedures for inclusion of informational material on the World Wide Web.

Consideration should be given to developing and implementing an effective office safety program.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

The DOE/NV currently relies on attorneys in the Oakland Operations Office to review products for potential patent concerns. The contractor is requested to indicate that a Patents review has been accomplished and if patentable material exists in the STI product. This may be an unfair requirement levied on the contractor unless in-depth training is provided, or an individual knowledgeable about patents is available as a resource.

Section 8 - Training:

These training requirements are identified in DOE Order 5650.2B, Executive Order 12958, 32 CFR Part 2001, 10 CFR Parts 552, and 552a; and will also be contained in an additional portion being drafted in 10 CFR.

Authorized Derivative Classifier training is mandatory for those reviewing products for classification and unclassified sensitive information, e.g., Unclassified Controlled Nuclear Information, and Operation Security information.

Indoctrination and/or training in The Freedom of Information Act and Privacy Acts is another area which requires

at least a basic knowledge of the exemptions. applicable to these Acts.

Export Controlled Information training is required. This subject area appears with frequency within technical reports. A training course with certification is being planned for the future. However, before implementation, the responsible parties involved with technical reporting reviews require training.

Section 9 - Vulnerabilities:

Researchers and scientists may wish to share information with colleagues before appropriate reviews have been conducted. Dissemination of sensitive information over the Internet, during conference presentations, and in symposium proceedings or Journal publications prior to conducting appropriate reviews poses a potential vulnerability. Not only is there a possibility of disclosure of classified and sensitive information, but once the information is disseminated, Patents rights may be jeopardized. if Patent disclosure forms have not been filed.

Section 1 - Work Activity:

The Public and Employee Communications work activity consists of the following areas:

Employee Communications: This function involves the start-to-finish production of a variety of employee communications products and programs, from planning and conceptualization through final completion. These products and programs communicate authorized and accurate information of a general, management, or technical nature to all employees. Specific tasks include newsletter production, special management program coordination, video news magazine production, etc.

Public Information: This function involves the provision of accurate and authorized information regarding activities and programs to the media and the public. Specific tasks include responding to media inquiries and requests for information from stakeholders; publicizing strategic plan and associated DOE/NV and contractor accomplishments and activities; producing brochures, fact sheets, exhibits, and videotapes on business capabilities and opportunities; etc.

Community Relations: This function involves the development and maintenance of positive relations with stakeholders, community leaders, civic organizations, and elected officials to promote and preserve the DOE/NV family's reputation and image. Specific tasks include coordinating participation in community events, responding to community requests for presentations or corporate donations, arranging school and civic partnering activities, serving as a liaison with elected officials and business/ community leaders, etc.

Section 2 - Hazards and Management Issues:

No unique hazards exist beyond those encountered in a typical office environment.

Employee Communications: The employee communications program enhances the well-being, productivity, and morale of employees by publicizing policies and activities related to security, safety, and health. The program also helps management implement change processes and improvements by communicating management and quality objectives and initiatives, as well as strategic development goals and accomplishments.

Employees are the best ambassadors of any company or agency; therefore, the credibility and reputation of the DOE/NV family has the potential to be harmed if employees perceive that information is not being communicated to them clearly, completely, accurately, or on a timely basis. Efforts must be made to ensure information receives the appropriate approvals, to ensure it is accurate, unclassified, and nonsensitive.

Public Information: The survival of the test site work force may depend on the success of efforts to attract new projects to the site. Keeping the public and the media informed of our efforts to do so is an important part of the public information program. Also, the public's perception of the DOE/NV community depends on whether information is conveyed quickly and accurately through approved channels.

The reputation of the DOE/NV family can be seriously damaged if inaccurate or unauthorized information is released to the media or the general public. Precautions must be taken to avoid breach of an employee's privacy during interactions with the media. Care must also be taken not to reveal any classified or sensitive information,

1.6 Public and Employee Communications

Latest Revision: 9/30/96

especially during a crisis situation.

Community Relations: An effective community relations program is designed to generate goodwill dividends that an organization can call upon when the need for recognition and understanding from the community is tantamount, especially during a crisis. By establishing and maintaining open relationships with government, community, education, and business leaders, we can build support for the DOE/NV family's business objectives and develop a favorable reputation in the community.

Interactions and information exchange with elected officials and community leaders must be handled with extreme sensitivity, or we run the risk of losing support for our business objectives and jeopardizing our favorable reputation as a responsible member of the community.

Section 3 - Standards:

Standard	Title
42 USC 2011, et seq.	Atomic Energy Act of 1954, as amended
<i>Note</i> Defines DOE access authorization.	
48 CFR 970.5204 Acquisition Letter 92-8R	Ownership of Records
<i>Note</i> Defines "property" of the government.	
5 USC 552a	Privacy Act
<i>Note</i> Sets forth restrictions on the collection and maintenance of information and the disclosure of records.	
Lesly's Public Relations Handbook	Lesly's Public Relations Handbook
<i>Note</i> Standards from Chapters entitled "Employee Communication" and "Employee Publications".	

Section 4 - Measurement Parameters:

Employee Communications: Assess audience satisfaction and adjust products and programs to address reported needs and concerns of audience members.

Public Information: Respond to requests for information (e.g., FOIA) within the mandated turnaround period.

Community Relations: Distribute community funds in accordance with established contribution guidelines.

Section 5 - Implementation Considerations:

Each of the above named functions adheres to requirements that have costs associated with compliance but which are not cited as standards addressing management issues.

Printing and reproduction regulations guide the production of employee communication, public information, and community relations vehicles and tools as addressed in WBS 1.5.4 "Printing & Publishing."

1.6 ***Public and Employee Communications***

Latest Revision: 9/30/96

Computer network and other telecommunications regulations that govern some of the electronic means by which employee communications and public information messages are distributed are covered in WBS 1.4.1 "Asset Management & Planning."

Each previously mentioned function adheres to the following professional guidelines which provide suggested guidelines and standards for producing and distributing accurate, authorized communications in a timely, efficient, and ethical manner:

The Associated Press "Stylebook and Libel Manual"

The Public Relations Society of America's "PRSA Code of Professional Standards for the Practice of Public Relations"

The Society for Technical Communication's "STC Ethical Guidelines for Technical Communicators"

Consideration should be given to developing and implementing an effective office safety program.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

Internal Audit is an independent appraisal and control function that examines and evaluates the adequacy and effectiveness of other controls. Management is assisted by furnishing analysis, appraisals, and counsel concerning the activities audited and promoting effective control at a reasonable cost.

Work activity is representative of that performed at a publicly listed corporation. Commercial auditing standards are described in the American Institute of Certified Public Accountants (AICPA) Code of Professional Conduct and the Institute of Internal Auditors Codification of Standards for the Professional Practice of Internal Auditing (Red Book). Both sets of standards are incorporated within the GAO Government Auditing Standards (Yellow Book).

The organization participates in the Cooperative Audit Strategy with the Office of the Inspector General (OIG) and the NNSA/Nevada Site Office (NSO) (NNSA/NSO). The OIG uses a risk assessment methodology as a basis for planning audits. The OIG also relies on the work of others; specifically, the work of the Management & Operations (M&O) contractor's internal audit staff. The audit strategy requires the OIG to establish a tracking system to provide the information needed to produce a coordinated OIG audit plan. This tracking system should prevent duplicate audit coverage.

This work activity begins with a risk assessment of all areas as described in the IG audit manual relating to audits of both integrated and maintenance and operation (M&O) contractors. Based on the results of the risk assessment, an annual audit plan is prepared and routed to the NNSA/NSO for their review and approval. The approved plan is then provided to the IG. The scheduled audits will be either financial or operational in nature and will include the following general audit objectives.

Additional work activities are detailed as follows:

- Determine compliance with laws, regulations, and contract provisions that govern the acquisition, management, and use of resources, or have a material effect on financial information.
- Determine whether audited functions are being managed efficiently and effectively, and within the terms of the contract.
- Determine whether programs, projects, and other activities are functioning as intended and are accomplishing their stated purpose or objective.
- Determine whether internal controls are adequate to prevent and/or detect fraud, waste, and abuse.
- Determine whether incurred costs are allowable. Identify and report unallowable costs.

Full and complete access is provided to all records, physical properties, and personnel relevant to the area under review. All activities of the M&O and its subcontracts are subject to audit. Individual audit reports and an annual

summary of audits performed are provided to both the OIG and the NNSA/NSO Financial Review and Performance Assessment Division (FRPAD). Other work activities are described in the following related packages:

- WBS 1.7.2 - Internal Audit-Vendor Audits
- WBS 1.7.3 - Internal Audit-Special Investigations.

Section 2 - Hazards and Management Issues:

The internal audit personnel can be potentially exposed to the hazards identified for the other work activities at sites that may be visited.

The broader management issues pertaining to internal audit work activity are similar to those publicly listed corporations must satisfy in regard to stockholders, board of directors (audit committee), and Security Exchange Commission requirements and/or regulations. Management issues/requirements relate to the following general areas:

The system of managing government operations/programs is dependent on an elaborate structure of relationships among all levels of government. Officials and company officials who manage these operations/programs need to present an account of their activities to the public and to other branches of the government.

Contractors that are entrusted with public resources are responsible for establishing and maintaining cost effective accounting and administrative controls to ensure that appropriate goals and objectives are met; resources are safeguarded; laws and regulations are followed; and reliable financial and operational data is obtained, maintained, and fairly disclosed.

Contractor audit activities are an essential element of public accountability. Audits provide an independent assessment of operational and financial information reported by management.

Section 3 - Standards:

The Necessary & Sufficient set of standards relate to the Internal Audit work activities that cover the auditors' professional qualifications, the quality of audit effort, and the characteristics of professional and meaningful audit reports and the interrelationship with the DOE IG and the DOE field offices. The standards are as follows:

Standard	Title
General Accounting Office (GAO)	Government Auditing Standards (Yellow Book)
<i>Note</i>	
48 CFR 970.5232-3	Accounts, Records and Inspection (Alternate II)
<i>Note Updated by BCR 2004-023, 10/20/04.</i>	

Section 4 - Measurement Parameters:

The recommended measurement parameters for BN Internal Audit activities are:

Management accepts and implements Internal Audit recommendations.

Cost savings are identified in the area of cost avoidance or recovery.

Section 5 - Implementation Considerations:

Most of the requirements and standards placed on the internal audit activity are derived from laws or regulations that must be followed. However, as required by the Cooperative Audit Strategy, the NNSA FRPAD has the responsibility of providing oversight of the BN Internal Audit function as a means of assuring the IG that the audits performed adhere to the standards and regulations. As such, the NNSA/FRPAD has established local requirements to allow them to fulfill this IG requirement.

With the advent of a new contract and changes on how the organization conducts business, these local requirements need to be assessed in a timely manner by both NNSA FRPAD and Internal Audit as a means of identifying the most effective and efficient way of working together.

Under the Federal Acquisition Streamlining Act (Public Law 103-355), the NNSA regulations for maintenance and operations contractors have been modified to allow the contractor to follow "best business practices" and then document the rationale for decisions made using these practices.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

Internal Audit is an independent appraisal and control function. Internal Audit performs various types of vendor (contract) audits when requested by project managers, procurement and support services.

Internal Audit's role is to provide professional advice on accounting and financial matters, and to assist in negotiating, awarding, administering, repricing, and settling contracts. When dealing with vendors, Internal Audit's recommendations are advisory in nature.

The objective of vendor auditing is to ensure that prices paid for goods and services are fair and reasonable. A fair and reasonable price is one that is fair to both parties to the contract. Vendor audits are performed before award, during performance, and after completion as described below.

Before Subcontract Award

- **Cost or Pricing Data:** Review the subcontractor's "cost or pricing data." This information supports their price proposal. This type of audit represents the majority of all vendor audits performed by Internal Audit.
- **System Reviews:** Review various subcontractor systems, when necessary, to insure they are adequate to support the requirements of the subcontract before awarding. Examples of areas that may be subject to review are the subcontractor's accounting, purchasing, estimating, or payroll systems. These reviews are performed by performance assurance personnel in coordination with audit personnel.

During Subcontract Performance

- **Incurred cost reviews:** This type of audit is performed to determine costs incurred.
- **Repricing of the original subcontract:** This type of audit is performed to account for changes or claims.
- **Defective Pricing Reviews:** This type of audit is performed to ensure that the "cost or pricing data" supporting the original subcontract is current, accurate, and complete at the time of negotiations.

After Subcontract Completion

- **Historical Cost Audit:** This type of audit is performed to ensure that claimed costs are allowable. Historical cost audits are usually performed annually.
- **Subcontract Audit Closing Statement:** This type of audit is performed as a means of issuing a final statement on the total allowable costs.

Vendor auditing performed is similar to the types of vendor audits performed at publicly listed corporations. Commercial auditing standards are based the following standards which are incorporated in the "GAO Government Auditing Standards (Yellow Book):"

- American Institute of Certified Public Accountants (AICPA) "Generally Accepted Auditing Standards"
- Institute of Internal Auditors (IIA) "Codification of Standards for the Professional Practice of Internal Auditing (Red Book)."

A major difference in government procurement is the specificity of types of costs that are allowable and types of financial systems that are required under the Code of Federal Regulations.

Other related work activities are described in the following documentation packages:

- WBS 1.7.1 - Internal Audit - Regular Audits
- WBS 1.7.3 - Internal Audit - Special Investigations

Section 2 - Hazards and Management Issues:

There are no unique hazards beyond those encountered in any office environment.

The management issues related to this work activity are as follows:

Vendor expenditures represent a significant portion of costs.

Section 3 - Standards:

The Necessary and Sufficient set of standards relate to Internal Audit work activities that cover the auditors' professional qualifications, the quality of audit effort, the characteristics of professional and meaningful audit reports, and the interrelationship with the DOE Inspector General and the DOE field offices. Specific standards that relate to vendor audits are the Federal Acquisition Regulations (FARs), which state the policies and rules that govern contract pricing and Part 15, which covers general requirements regarding negotiated contracts. Specific requirements and/or standards covering negotiated prime contracts and subcontracts are presented in various subparts and sections. Specific requirements and/or standards that apply to vendor auditing are contained within the following subparts and sections.

Standard	Title
48 CFR 30	Cost Accounting Standards Administration
<i>Note</i>	
48 CFR 31	Contract Cost Principles and Procedures
<i>Note</i>	
48 CFR 15.403	Obtaining Cost or Pricing Data
<i>Note Updated by BCR 2004-023, 10/20/04.</i>	
48 CFR 15.404-1	Proposal Analysis Techniques

1.7.2 Vendor Audit

Latest Revision: 11/30/04

Note Updated by BCR 2004-023, 10/20/04.

48 CFR 15.404-3

Subcontract Pricing Considerations

Note Updated by BCR 2004-023, 10/20/04.

Section 4 - Measurement Parameters:

The recommended measurement parameters for vendor audits are as follows:

- Vendor "Cost or Pricing Audits:" The performance measurement for conducting a vendor "cost or pricing data" audit is based on comparing the actual time of performance to the required turn-around time established by the contracting officer. However, note that measuring performance in a meaningful manner is dependent on receiving adequate lead time (e.g., Defense Contractor Audit Agency (DCAA) requires a minimum of 30 days lead time) and the adequacy of the submitted "cost or pricing data." The subcontractor must also have an adequate financial/accounting, estimating, and procuring systems in place to support the submitted "cost or pricing data."
- Additional Types of Vendor Audits: The performance measurement for conducting various other types of vendor audits is based on comparing the actual time of performance to the required turn-around time established by the contracting officer. However, note that measuring performance in a meaningful manner is dependent on receiving adequate lead time and reasonable completion dates, taking into consideration the complexity of the audits.
- Internal Audit will start and complete the vendor audit in 30 days or less.

Section 5 - Implementation Considerations:

The specific requirements and standards placed on the internal audit activity relating to vendor audits are derived from the FAR regulations. The general auditing standards are incorporated in the Yellow Book which is mandatory. However, as required by the Cooperative Audit Strategy, the NSO Financial Review and Performance Assessment Department (FRPAD) is responsible for providing oversight of the Internal Audit function. This is a means of assuring the IG that the audits performed adhere to standards and regulations. As such, the NSO FRPAD has established local requirements to allow them to fulfill this IG requirement.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

Internal Audit is an independent appraisal and control function. Special investigations are conducted at the request of DOE/IG, management, or are independently identified and undertaken by Internal Audit. Special Investigations encompass fraud, waste, abuse, defalcation, misappropriation, and other fiscal or non-fiscal irregularities. Special investigations consist of performing extended procedures and techniques to determine whether fraud, waste, abuse or other irregularities have occurred. The objective of a special investigation is to gather sufficient evidential matter to reach a conclusion on the allegation of suspected fraud, waste, abuse, or other irregularities.

One of the responsibilities of management is the detection of defalcation, misappropriation, and other irregularities. The primary area of special investigations relates to fraud. Fraud encompasses fiscal irregularities that include, but are not limited to, the following:

- Any dishonest or fraudulent act,
- Forgery or alteration of any document or account,
- Misappropriation of funds, securities, supplies, or other assets,
- Impropropriety in the handling or reporting of money or financial transactions,
- Profiteering as a result of insider knowledge or disclosing to other persons activities contemplated by the company,
- Accepting or seeking anything of material value from vendors or persons providing services/material to the company,
- Destruction or disappearance of records, furniture, fixtures, or equipment,
- Use of government-funded resources including labor, equipment, and materials for non-government, private purposes.

Typical fraud examinations involve the following attributes and characteristics:

- Fraud examinations are adversarial in nature,
- Fraud examinations are nonrecurring and are conducted only with sufficient predication,
- Fraud examinations are conducted to reach a conclusion relating to the specific allegations and to affix responsibility,
- The scope of fraud examinations includes the identification and examination of internal supporting documentation, obtaining and reviewing external documentation (e.g., public records, correspondence), conducting internal and

1.7.3 *Special Investigations*

Latest Revision: 11/30/04

external interviews, obtaining legal counsel opinions, etc.,

· The results of all special investigations performed by Internal Audit are reported to executive management. Results of special investigations in the areas of fraud, waste, and abuse are reported to executive management, NSO Financial Review and Performance Assessment Department (FRPAD) who, in turn, reports the results to the DOE/IG.

Other work activities which are not included in this documentation package are:

· WBS 1.7.1 - Internal Audit - Regular Audits

· WBS 1.7.2 - Internal Audit - Vendor Audits

Section 2 - Hazards and Management Issues:

Hazards associated with internal audit work activities are generally those encountered in any office environment. There are no environment, safety, or health hazards specific to Internal Audit.

The management issues related to this work activity are as follows:

Develop awareness in all management levels of the responsibility to report any suspected irregularities,

Establish a nonbiased and uniform method of performing special investigations,

Impact on employee morale,

Impact on costs,

Adverse publicity.

Section 3 - Standards:

Standard	Title
General Accounting Office (GAO)	Government Auditing Standards (Yellow Book)
<i>Note</i>	
48 CFR 952.203-70	Whistleblower Protection for Contractor Employees
<i>Note</i> This citation implements 10 CFR 708, the DOE policy requiring reporting of waste, fraud, and abuse and protection of whistleblowers. Updated by BCR 2004-023, 10/20/04.	
DOE O 221.1	Reporting Fraud, Waste, and Abuse to the Office of the Inspector General
<i>Note</i> Updated by BCR 2004-023, 10/20/04.	

1.7.3 Special Investigations

Latest Revision: 11/30/04

Section 4 - Measurement Parameters:

The recommended performance measurements for Internal Audit - Special Investigations are:

- Closure as evidenced by the issue of an Internal Audit memo or report.
- Recoveries and fines collected as a result of special investigations, as well as cost savings realized from the adoption of more effective and efficient work processes. This includes both property and money.

Section 5 - Implementation Considerations:

N/A

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

Administrative Systems and Controls are systems that are put in place to accomplish the administrative goals of the organization. The types of activities vary, but tend to focus on the definition of roles, responsibilities, communications protocol, and processes through which work throughout the DOE Nevada complex is accomplished. For these purposes the work shall be divided into Contract Oversight, and New Project Acceptance.

Contract Oversight includes those activities required to define, track, evaluate, and make payment on the work done by DOE Nevada's contractor organizations. These contracts encompass all of the contracted work done in the NV complex, including, but not limited to, the Performance Based Management and Operating Contracts and the Support Services Contract.

New Project Acceptance includes those activities required to accept, site, negotiate, and commit to work to be done by the DOE Nevada Complex for any new projects.

This activity includes contractor, national laboratory, other federal agencies and other user organizations' participation in executing authorization and activity agreements.

This activity includes contractor, national laboratories, other federal agencies, and other user organizations' participation in DOE/NV planning processes, including those established for DOE Work Authorization development as described in the DOE/NV planning documents (Directives System).

This work activity includes a management system for communicating lessons learned to appropriate people within the DOE/NV community or organizations and DOE Department wide organizations consistent with Department policy.

This activity includes participation in the DOE and DOE/NV processes of development of sound DOE and DOE/NV Directives.

This activity includes contractor, national laboratories, and other federal agencies, and other user organizations' requirements to participate consistent with DOE/NV complex wide Work Smart Standards.

This activity includes contractor, national laboratories, other federal agencies, and other user organizations' requirements to participate consistent with DOE/NV Change Review Group Processes establish to coordinate and control by consensus, and the DOE/NV complex-wide Work Smart Standards.

This activity includes contractor, national laboratories, other federal agencies, and other user organizations' participation in DOE/NV planning processes, including those established for DOE Work Authorization development as described in the DOE/NV planning documents (Directives System).

This work activity includes an oversight process of business management systems, which are conducted jointly by M&O Contractors (currently only Bechtel Nevada, Inc.) and DOE/NV, consistent with Department policy. It also

includes and ES&H oversight process conducted by DOE/NV on contractors and laboratories wherein such organizations are expected to implement an internal self-assessment program in accordance with Quality Assurance requirements.

This work activity includes: Planning and Budget Prioritization of Work Activities.

This work activity includes: Planning and Budget Prioritization of ES&H Activities, Contractor Performance Administration, Work Controls, Readiness Reviews, and Safety Management Systems Maintenance.

Section 2 - Hazards and Management Issues:

Appropriate DOE/NV Management planning mechanisms must integrate contractor/user planning of new work and changes to existing work to ensure appropriate DOE/NV involvement at certain points in time and changes to existing work to ensure information is available so DOE responsibilities can be fulfilled. This planning involvement includes DOE safety reviews prior to DOE authorization to proceed with work (or significant changes to existing work), reviews associated with the control and protection of real estate, DOE assignment of responsibility for safety coordination, identification of hazards and controls associated with real estate to facilitate emergency response actions, access to information necessary to facilitate DOE/NV's responsibility for deconfliction of plans and schedules of certain work at NTS, and provide and interface mechanism to facilitate accounting and recovery of proportionate infrastructure support costs from users of DOE real estate.

In order for DOE/NV and Contractors to integrate planning, appropriate contractor participation in DOE/NV processes can ensure overall economy and efficiency and improvement of quality of DOE/NV directives, especially contractor requirements documents.

The planning and documentation of performance agreements and joint evaluation of M&O contractor performance in the area of business management functions for the benefit of DOE senior management and Headquarters as a matter of policy are considered a management issue. In addition, the DOE/NV's ES&H Oversight responsibilities as a matter of DOE Policy DOE P 450.5 are considered a management issue.

The need for a prioritization system and defined interface relationship between DOE/NV and contractors is considered a safety related management issue.

Implementation of DOE/NV processes regarding: Planning and Budget Prioritization of ES&H Activities, Contractor Performance Administration, Work Controls, Readiness Reviews, and Safety Management Systems Maintenance are considered management issues which demand efficient process definition, control, and execution.

Section 3 - Standards:

Standard

Title

DOE O 225.1A, CRD

Accident Investigation

Note Added by BCR 2004-006, 4/21/04. Relocated from the B3 List.

Latest Revision: 4/21/04

DOE O 251.1A, CRD Directives System Order

Note Added by Change Request 99-017, also added to B2 list.

NV O 140.X Facility and Test Site Visits/Tours

Note None

NV M 210.X, CRD Contractor Performance Administration

Note Added by Change Request 2000-014. Added to B2 and B3.

NV M 220.XC, CRD NNSA/NV Oversight Management System

Note BCR 2003-038 replaced NV M 220.XB with NV M 220.XC.

NV M 251.1-1B, CRD NNSA/NV Directives System Manual

Note Added by Change Request 1999-017. Also added to B2 list. Revised by BCR 2002-011, 4/1/2002.

NV M 410.XA, CRD Task Plan and Change Control Process

Note Added by BCR 1998-014. Changed by BCR 2000-012.

Through its application, the manual provides for the establishment of a baseline and then a controlled process through which changes in expectations and performance are documented for management. This mitigates the risk that changes will be made in which management is not a participant and that activity which would create additional risks for management are either discouraged, or given the opportunity to be aired ahead of time.

NV M 412.X1C, Chg. 1, CRD Real Estate/Operations Permit

Note Provide information needed by organizations to economically and efficiently interface with DOE/NV's planning process established for new work and changes to existing work.
Chg. 1 added by BCR 2003-036.

NV M 412.XA, CRD Project Screening and Location Approval Process

Note Added by BCR 1998-014. Added to B2 and B3.

This establishes a series of reviews and checkpoints through which all work associated with the Nevada Test site must pass. This allows for assurances that the work is with-in the scope of work allowable on the NTS, that the work will not conflict with existing work at the NTS, and that the organization as a whole gets warning that work is coming to the NTS. This gives management a chance to reject the work if it contains risks or elements that they are not willing to accept and provides a forum for them to become aware of the work, thus allowing them to implement their normal system of controls. Updated by Change Request 2000-014, 08/22/2000.

NV M 450.3XB, CRD Work Smart Standards Manual

Note Added by Change Request 2000-001. Updated by Change Request 2000-014, 08/22/2000. Changed by BCR 2001-009 - 4/3/01. Revised by BCR 2002-010. Also added to B2 and B3.

NV O 442.1A Employee Concerns Program

Note Added by BCR 2003-033

1.8 Administrative Systems and Controls

Latest Revision: 4/21/04

NV O 450.4, CRD Safety Management Systems Maintenance

Note Added by Change Request 2000-014, 8/22/2000. Added to B2 and B3.

NV O 450.X Nevada Test Site Access and Area Control

Note Added by BCR 2002-019. Also added to B2 and B3.

DOE M 140.1-1B, CRD Interface With the Defense Nuclear Facility Safety Board

Note Added by BCR 2000-013. Revised by Change Request 2001-012a - 8/13/01.

NV M 450.XA, Chg 1, CRD Authorization and Activity Agreements for Facilities and Operations

Note Revised by Change Request 99-015, also added to B2 and B3. Updated by Change Request 2000-014, 08/22/2000.

NV O 124.X, CRD Planning and Budget Prioritization of Work

Note Added by Change Request 2000-012, 8/22/2000.

NV O 140.X Facility and Test Site Tours and Visits

Note Added by BCR 2003-026.

NV O 230.XA, CRD Lessons Learned Program

Note Added by BCR 1999-014. Standard adopted to mitigate the management issue. Revised by BCR 2001-001. Also added to B2 and B3 List.

NV O 412.X3A, CRD Work Control

Note Added by Change Request 2000-014, 8/22/2000. Added to B2 and B3. Changed by BCR 2001-007, 2/26/01.

Section 4 - Measurement Parameters:

Ideally Management Systems and Controls contain elements in which value added controls are added, and non-value added controls are dropped. The art of management involves tailoring or fixing these controls so that maximum benefit is gained from a minimum expenditure. As a result, the costs and time associated with the implementation should be measured and compared with the gains received.

Section 5 - Implementation Considerations:

One element of management systems is the need to continuously evaluate and update them. The standards selected in this system are rather fluid, and their content may change over time.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

Management systems and controls reflect the beliefs and desires of the current management team. Should these individuals change, there is a possibility that the management controls system within DOE/NV might also change.

Section 8 - Training:

Employees need to be trained in the use of these standards prior to their implementation. Management Systems need to be fed information by a workforce who understands what information is sought in order to be effective.

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

This activity includes the identification of information that requires protection in the interest of national security; the review of documents to make such determinations; the review of documents for declassification; and the training and certification of derivative classifiers and Unclassified Controlled Nuclear Information (UCNI) Reviewing Officials.

Section 2 - Hazards and Management Issues:

The prevention of the inadvertent release of classified information contained in information resources; I.e., reports, briefings, Intranet/Internet, etc.

Section 3 - Standards:**Standard****Title**

10 CFR Part 1017

Identification and Protection of Unclassified Controlled Nuclear Information

Note Added by BCR 2001-002.

42 USC 2011, et seq.

Atomic Energy Act of 1954, as amended

Note Added by BCR 2001-002.

DOE M 471.1-1

Identification and Protection of Unclassified Controlled Nuclear Information (Does not have a Contractor Requirements Document, see Directive DOE O 471.1A).)

Note Added by BCR 2001-002.

DOE M 471.3-1, CRD

Manual for Identifying and Protecting Official Use Only Information

Note Only parts specified as mandatory by DOE O 471.1, CRD. Added by BCR 2003-032

DOE M 475.1-1, CRD

Identifying Classified Information

Note Added by BCR 2001-002.

DOE O 471.1A

Identification and Protection of Unclassified Controlled Nuclear Information

Note Added by BCR 2001-002.

DOE O 471.3, CRD

Identifying and Protecting Official Use Only Information

Note Added by BCR 2003-032.

DOE G 471.3-1

Guide to Identifying Official Use Only Information

Note Only parts specified as mandatory by DOE M 471.3-1, CRD.
Added by BCR 2003-032.

1.9 ***Classification of Information***

Latest Revision: 11/30/04

Executive Order 12958

Classified National Security Information

Note *Executive Order 12958 as amended March 25, 2003. This includes all predecessor executive orders.
Updated by BCR 2004-027, 9/15/04.*

Section 4 - Measurement Parameters:

See Performance, Objectives, Measures and Expectations (POMEs)

Section 5 - Implementation Considerations:

There are approximately 600 DOE classification guides, topical guides, UCNI guidelines and bulletins either available on the Classification Guidance System CD-ROM or in hard copy and made available by DOE to assist in implementing the requirements identified in number 3 above.

Section 6 - Work Environment:

Office environment must meet current government security requirements for processing information up to the SECRET RESTRICTED DATA level.

Section 7 - Uncertainties or Issues:

With every new administration in Washington there is a possibility of a new Executive Order on Classified National Security. The potential for enhanced security regulations may be implemented by DOE in the near future in response to incidents at the National Laboratories.

Section 8 - Training:

Classification Officer and Derivative Declassifiers are required to be trained by the DOE Headquarters Office of Nuclear and National Security Information. DOE/NV and BN Classification Officers train Derivative Classifiers and UCNI Reviewing Officials.

Section 9 - Vulnerabilities:

Compromise of Restricted Data and Classified National Security Information with damage to the national interest.

Section 1 - Work Activity:

Polychlorinated Biphenyls (PCBs) were offered by manufacturers for use in applications where stable, fire-resistant, heat-transfer properties were necessary. They were primarily used in transformers where their chemical and physical properties were a desired attribute. In 1977, the commercial production of PCBs ceased after studies indicated that they caused reproductive effects and other disorders in laboratory animals. Since that time, the use, storage and disposal of PCBs and the containers or equipment in which they are used or stored have been regulated.

The only PCB regulated items under DOE/NV control are capacitors located in Area 27 of the Nevada Test Site (NTS). While these items are in use and not leaking, there is no requirement to take them out of service or retrofit and reclassify them. The only other PCB items that will be managed by DOE/NV are those newly-discovered wastes characterized as containing PCBs. Items found to contain RCRA wastes in addition to PCBs are managed as hazardous waste, as described in WBS element 2.1.3. DOE/NV also accepts, and arranges for disposal, PCB items from non-DOE users of the NTS.

Generally, work activities associated with PCB management are broken down into five responsible areas. The areas of concern are characterization, marking, inspection, storage, and disposal.

Characterization

Items suspected of containing PCBs must be characterized to determine the level of concentration.

Marking

Each item containing greater than 50 parts per million must be marked accordingly.

Inspections

PCB items in service or in storage prior to disposal are inspected on a regular schedule to discover spills or leaks. If any spill or leak is discovered, Environmental Protection Agency (EPA) regulations specify repair and clean-up standards. Actual clean-up and repair work is covered under the WBS element for Construction (2.8) or Maintenance (3.4) depending upon the scope of work and the facility. Standards selected in this WBS are applied for the actual clean-up effort in other WBSs to ensure meeting appropriate TSCA requirements, e.g., the level of cleanliness required-how clean is clean enough.

On-Site Storage Prior To Disposal

PCB items and PCB oil stored for use, reuse, or disposal must meet applicable storage requirements. At the Nevada Test Site, PCBs are stored in a building in Area 6 which is specially constructed to prohibit the potential release of PCBs to the environment. PCB items may be stored in this facility for up to one year.

Disposal

The transportation and disposal of PCBs are regulated much like hazardous waste. PCBs are transported offsite using a hazardous waste manifest, and an off-site contractor disposes of them by incineration at a permitted facility.

Section 2 - Hazards and Management Issues:

PCBs present a health hazard to workers. Exposure to PCBs may cause skin and eye damage, and are considered carcinogenic.

Environmental hazards are the result of the improper handling of spills and leaks to the environment. Long term effects to animals contacting or ingesting materials contaminated with PCBs is the primary concern.

Management issues beyond those specified above concern the proper disposal of the material once it leaves the site. Assessment of facilities incinerating PCB liquids and disposing of PCB items have been performed.

Section 3 - Standards:

Standard	Title
40 CFR 761	Polychlorinated Biphenyl (PCB) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
<i>Note</i>	<i>Regulated under the Environmental Protection Agency's Toxic Substance Control Act.</i>
Nevada Administrative Code (NAC) 444.940 - 444.960	Polychlorinated Biphenyl (PCB)
<i>Note</i>	<i>DOE/NV only temporarily stores PCBs prior to disposal and is not subject to these requirements. All DOE/NV generated PCB waste is disposed at facilities permitted in states under the auspices of the federal law.</i>

Section 4 - Measurement Parameters:

PCBs are competently managed and corrective measures are effectively implemented once they are identified.

Section 5 - Implementation Considerations:

DOE/NV should consider the removal of the PCB capacitors in Area 27. This could result in discontinuing the PCB program and a cost savings. Maintenance of the temporary storage facility might no longer be required.

Section 6 - Work Environment:

Work activities may take place either indoors or outdoors.

Section 7 - Uncertainties or Issues:

Tonopah Test Range (TTR) operations may be assigned to DOE/NV on 10/31/96. PCB items may be present which require the implementation of a PCB management program.

Section 8 - Training:

Federal or state of Nevada PCB training requirements are not mandated.

Section 9 - Vulnerabilities:

An assessment of all known sources of PCBs and PCB items was performed in the early 1980's. Much work has taken place over the years to dispose of PCBs and relieve the NTS of the problem and liability. Most personnel believe that PCBs no longer exist. However, it is possible, although the probability is low, that additional sources may exist due to the size of the NTS and the variety of operations which have taken place over 40 years. With workforce downsizing, management must recognize the possibility of an unknowing and untrained workforce.

Section 1 - Work Activity:

Hazardous waste management at the following National Nuclear Security Administration/Nevada Site Office (NNSA/NSO) operated facilities which include all NNSA/NSO sponsored remediation sites, consists of the "cradle to grave" tracking process prescribed by the Resource Conservation and Recovery Act (RCRA), which includes requirements for analytical sampling and analysis, waste characterization, and waste disposal:

Wastes whose hazardous constituents are not regulated under RCRA (polychlorinated biphenyls, asbestos, radioactive material) will be managed per the federal, state, and local laws indicated in the following Work Breakdown Structures:

- 4.3 - Medical Services
- 2.1.2 - PCB Waste
- 2.1.4 - Solid Waste
- 2.1.5 - Transuranic Waste
- 2.1.6 - Mixed Waste
- 2.1.7 - Low-Level Waste

The hazardous waste management process can be summarized as follows:

- Identification: Discarded materials (out of service date, waste products, etc.) identified by waste generators.
- Characterization: Determine constituents of waste stream by process knowledge. If process knowledge is inadequate, then coordinate the necessary qualified personnel to arrange sampling and analysis activities to ensure the waste is accurately and adequately characterized.
- Accumulation: Waste (discarded material) is placed in a Satellite Accumulation Area (SAA) for temporary accumulation after being characterized. The SAAs should be near the point of generation, and must be under control of the generator.
- Transport: The waste is collected from the SAAs and transported to the RCRA compliant storage facility.
- Storage: The waste is stored at the RCRA compliant storage facility and is shipped off-site for treatment or disposal within the required time frame. The waste is tracked according to the date brought onto the RCRA storage facility, both by database and by logbook.
- Disposal: The waste is sent off-site to a commercial Treatment/Storage/Disposal Facility (TSDF) for disposal.

2. 1.3 *Hazardous Waste*

Latest Revision: 11/30/04

Section 2 - Hazards and Management Issues:

The hazards include chemical exposures to workers during transfer and transport activities from leaks or releases of the material, and physical exposures from fires or explosions. Hazards to the environment include soil contamination, air quality degradation, and chemical exposure to wildlife, resulting from leaks or releases of the material.

Of management concern is the potential for fines, litigation, etc. Fines may be levied for noncompliance such as misrepresentation of the waste, missing inspection reports, manifesting errors, or any other violations of the applicable requirements.

Section 3 - Standards:

Standard	Title
29 CFR 1910.120(p) <i>Note</i> <i>Requirements for the storage facility.</i>	Hazardous Waste Operations
49 CFR 171-178 <i>Note</i> <i>Establish standards for the packaging, labeling, marking, vehicle placarding, and shipping paper preparation necessary to ensure the safe transport of hazardous materials and wastes. Individual states and local governments may impose additional transportation requirements for transport of hazardous waste.</i>	General Information, Regulations, and Definitions; Hazardous Materials Table, Special Provisions, Hazardous Materials; .etc.
Andrews Air Force Base <i>Note</i> <i>Applicable state and other regulations implementing RCRA.</i>	Air Force Hazardous Waste Directives
Nevada Administrative Code (NAC) 444.850 - 444.8746 <i>Note</i> <i>Applicable state and other regulations implementing RCRA.</i>	Disposal of Hazardous Waste
New Mexico Administrative Code, Title 20, Chapter 4 <i>Note</i> <i>Applicable state and other regulations implementing RCRA.</i>	Hazardous Waste Management
California Code of Regulations (CCR), Title 22, Division 4.5 <i>Note</i> <i>Applicable state and other regulations implementing RCRA.</i>	Social Security/Environmental Health

Section 4 - Measurement Parameters:

The performance could be measured by the level of customer satisfaction, the number of Findings of Alleged Violation issued, and the dollar amount of any fines levied.

2. 1.3 *Hazardous Waste*

Latest Revision: 11/30/04

A measure of "quantity received over time" or "inventory stored" can be used to assess waste minimization and adequacy of storage facility.

Cost per unit volume.

Section 5 - Implementation Considerations:

No waste with "DOE-added radioactivity" will be accepted for transport to, or for storage at any RCRA regulated treatment, storage or disposal facility. The waste must be certified free of DOE-added radioactive contamination (both surface and volume) prior to transport from the SAA to any RCRA regulated treatment storage or disposal facility, making the radiation hazard associated with this operation very low.

Waste generators and subcontractors, i.e., TSDF personnel, transporters, etc., will be required to adhere to the standards set forth in this document. This will be verified by qualified personnel who are responsible for ensuring that the waste being stored at the storage facility and destined for off-site shipment meets all applicable requirements.

Section 6 - Work Environment:

Waste handling activities take place in many different settings, outdoors and office locations being the most common.

Section 7 - Uncertainties or Issues:

The need for current information is critical to the success of a program which uses the law to define boundaries. Personnel involved in hazardous waste management must be kept abreast of new developments, technologies, regulations, etc.

Section 8 - Training:

Training will be conducted according to the standards listed.

Section 9 - Vulnerabilities:

DOE/NV retains liability for subcontracted treatment, storage or disposal of hazardous waste. This vulnerability is mitigated by periodic assessments of disposal subcontractors and by requiring certificates of destruction or disposal from the disposal sites.

Section 1 - Work Activity:

Solid waste can be either a solid, liquid or gas which has been disposed of, abandoned or recycled. There are a few wastes which are exempt from solid waste regulations which are normally regulated under other environmental laws. Solid waste may be further broken down into a category called "hazardous waste" which will not be discussed in this document. (See WBS Element 2.1.3).

Solid waste generators vary from office personnel to construction site personnel. The types of waste vary from office paper, to cafeteria waste, to construction debris.

Work activities include:

- Transporting solid waste to the disposal site - See WBS 3.6 Transportation.
- Verification that waste being disposed is adequately characterized.
- Disposal of the solid waste. This entails operating heavy equipment in accordance with established procedures or techniques common to industrial operations. This includes moving waste in the disposal site and properly covering it.
- Prepare solid waste generator reports for submission to the state of Nevada.
- Closure and postclosure activities. This activity will not be defined until a final plan has been prepared and approved by the Department of Energy and the state of Nevada.
- Generally, operations will entail the movement and compaction of soil to form a final cover over the site.

For work activities conducted at off-site locations in Las Vegas, California, Washington, D.C., and New Mexico operations are conducted in government owned or leased facilities or at Air Force bases. Solid waste management is the responsibility of the local municipalities or the Air Force and is provided to the DOE operations as a service.

Section 2 - Hazards and Management Issues:

The hazards associated from activities at the disposal site include:

- Safety hazards in the operation of heavy equipment for the movement of the solid waste and cover material,
- Fire hazards from equipment and combustible waste,
- Potential environmental hazards due to leaching of materials into the groundwater or dispersion into the atmosphere.
- Health hazards from regulated waste disposal (e.g., asbestos) and disease vectors (i.e., rodents, dead animal

2. 1.4 *Solid Waste*

Latest Revision: 9/30/96

carcasses).

- Assuring that the waste disposed of is properly characterized.

Section 3 - Standards:

The following standards are considered necessary and sufficient for the solid waste management program:

Standard	Title
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29 CFR 1910.1001	Asbestos
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Note *Requirements for asbestos hazard abatement.*

Nevada Administrative Code (NAC) 444.570 - 444.7499	Solid Waste Management
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Note *These regulations establish the criteria for permitting, operating, and closing disposal sites. They also define illegal solid waste disposal activities.*

Nevada Revised Statutes (NRS) 444.440 - 444.465	Collection and Disposal of Solid Waste
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Note

Section 4 - Measurement Parameters:

The following parameters are indicators of an effective solid waste management program:

OPERATIONS

- Decreased volume of waste entering the disposal site due to waste minimization (reduction, reuse, recycling). Although, this action does not directly impact this work activity, it represents a useful company wide performance measure.
- Decreased disposal cost per ton of solid waste.

COMPLIANCE

- No reports by disposal site personnel of generators improperly disposing of solid waste not meeting the disposal site's waste acceptance criteria.
- Submittal of state of Nevada mandated waste generator reports and other documents in a timely manner.

Section 5 - Implementation Considerations:

Implementation of this program is necessary to meet state of Nevada regulations. The regulations outlined and the items considered above meet the minimal acceptable criteria for an effective solid waste management program. As long as these minimal requirements are met, the health and safety of the employees and the public will be maintained and the environment will be protected. These requirements are specified in detail in the permit application for each disposal site.

Because the heavy equipment operation is not covered by specific standards, a job-safety analysis should be

performed to identify the specific hazards and then promulgate and implement the standards necessary to abate the hazards to an acceptable level.

The NTS landfill has been in operation for many years and pre-dates some of the regulations. Backfitting of design and operations features requires cost-benefit assessment and negotiation of requirements in the applicable permits.

Section 6 - Work Environment:

Work activities take place in the outdoor environment

Section 7 - Uncertainties or Issues:

Although state of Nevada regulations defined minimal standards, closure and postclosure costs have not been adequately defined for each disposal site. This activity may not have to be addressed until the site is prepared for closure.

Section 8 - Training:

Regulatory driven training is not applicable. Site personnel receive On-the-Job Training (OJT) to recognize job hazards and identify proper waste characteristics.

Section 9 - Vulnerabilities:

Generators must dispose of solid waste which meets the criteria for the disposal site. It is possible that Nevada Test Site personnel may dispose of unacceptable materials, and state of Nevada inspectors will discover this material. This action could lead to a state of Nevada issued Finding of Alleged Violation resulting in a fine, possible litigation and loss of credibility for the Department of Energy and its contractors. Generator education, random inspections and review of submitted documentation ensure that all waste meets the acceptance criteria.

2. 1.7 *Radioactive Waste*

Latest Revision: 1/26/05

Section 1 - Work Activity:

This work activity includes generation, acceptance, and management of Radioactive Waste (RW) including low-level, mixed low-level, transuranic, and mixed transuranic waste.

A. Waste Types:

1. Low-Level Waste (LLW) is radioactive waste that is not high-level radioactive waste, spent nuclear fuel, transuranic waste, byproduct material (as defined in the Atomic Energy Act (AEA) of 1954, as amended), or naturally occurring radioactive material. Small quantities of 11e.(2) (AEA) byproduct may be managed as LLW.
2. Transuranic Waste (TRU) is radioactive waste containing more than 100 nanocuries/gram of alpha-emitting transuranic isotopes with an atomic number greater than 92 and a half-life greater than 20 years.
3. Mixed Waste (MW) contains both radioactive waste (LLW or TRU) and a Resource Conservation and Recovery Act (RCRA) or state-of-generation hazardous component.

B. Work Activities:

LLW work activities consist of the management of LLW originating from onsite or offsite locations. LLW is typically disposed in shallow-land burial cells, although some waste has been placed in deeper Greater Confinement Disposal (GCD) boreholes.

TRU waste work activities consist of waste that is generated, treated, or stored at the Nevada Test Site (NTS), shipped offsite for treatment and/or disposal. This also includes activities associated with TRU waste buried in Area 5 GCD boreholes or shallow-land burial cells.

MW work activities consist of the management of waste originating from onsite or offsite locations. MW is typically disposed in shallow-land burial cells, consistent with RCRA requirements.

Five primary work activities are involved in managing RW: generation; treatment; storage; disposal; and transportation. Typical processes used in the primary work activities may include:

- Development of Execution Plans and implementation documents
- Life Cycle Planning & Management
- Facility Design & Site Evaluation
- Waste Characterization & Waste Stream Identification
- Identification of Disposal Alternatives
- Waste Accumulation
- Waste Certification
- Facility and/or Waste Inspection/Monitoring
- Packaging
- Performance Assessment (PA)

- Composite Analysis (CA)
- Waste Acceptance
- Facility Closure
- Environmental Monitoring

Not all processes are applicable to each individual facility, operation, or activity. The governing documents will identify, control, and implement the specific process(es) that are applicable. In addition to the standards listed in Section 3, the following Work Smart Standards (WSS) contain specific elements that are applicable to the Radioactive Waste work activities: WSS 1.1.5, "Training;" WSS 2.1.2, "PCB;" WSS 2.1.4, "Solid Waste;" WSS 2.5, "Drilling;" WSS 2.7.1, "Engineering Design;" WSS 2.8, "Construction;" WSS 2.10, "Occurrence Reporting;" WSS 2.12, "Hazard Assessment;" WSS 2.X, "Hazard Category 2 & 3 Non-Reactor Nuclear Facilities;" WSS 3.4, "Facility Maintenance;" WSS 3.6, "Transportation;" WSS 3.7, "Industrial Security;" WSS 4.2.1, "Occupational Safety & Health Program;" WSS 4.2.2, "Industrial Hygiene;" WSS 4.4, "Radiation Protection;" WSS 4.5, "Environmental Protection Program;" WSS 4.8, "Emergency Management Program and System;" and WSS 4.9, "Environmental Monitoring Program." In addition WSS 1.8 "Administrative Systems and Controls" applies to facilities that generate, treat, store, or dispose of RW.

1. Generation: Generation is an activity or process that produces RW. RW generated at NTS or under the purview of DOE/NV consists mostly of investigation-derived and remediation waste from environmental restoration activities and wastes produced from research and development activities. All generators of waste destined for the NTS must meet the NTS waste acceptance criteria.
2. Treatment: Treatment is any method, technique, or process that changes the physical or chemical characteristic of waste to render it less hazardous; safer to transport, store, or dispose; or reduce its volume. Treatment activities could include, but are not limited to, repackaging, stabilization, and volume reduction.
3. Storage: Storage is the holding of radioactive waste until the waste is treated and/or disposed. Storage could occur at point-of-generation or other designated locations.
4. Disposal: Disposal is the emplacement of waste at designated locations at the NTS in a manner that ensures protection of the public, workers, and the environment with no intent of retrieval and that requires deliberate action to regain access to the waste. Disposal activities occur in the Area 3 and 5 Radioactive Waste Management Sites.
5. Transportation: Transportation is any transfer of RW between generation, treatment, storage, and disposal locations.

Section 2 - Hazards and Management Issues:

Environment, Safety, and Health hazards associated with generation, storage, treatment, and disposal activities include: 1) nuclear/radiological (e.g., human exposure, environmental releases); 2) chemical (e.g., human exposure, environmental releases); 3) standard industrial safety (e.g., slip, trip, fall, snake bites); 4) environmental impact (e.g., degradation of existing habitat); and 5) standard transportation concerns (e.g., motor vehicle accident).

Management issues include: a) future decisions regarding the final disposition of previously disposed waste in GCD

2. 1.7 *Radioactive Waste*

Latest Revision: 1/26/05

boreholes; b) waste with no path to disposal; c) multi-agency regulatory authority of certain waste types; d) data management (i.e. record keeping and traceability); e) non-compliance or violations; f) facility hazard classification; g) defensibility of the waste certification process; and h) public perception. Generation of RW without considering proper management and disposition may impact budgets and result in non-compliance or violations. These decisions may impact stakeholders' perception of DOE/NV's credibility.

Section 3 - Standards:

The following standards are used to mitigate the hazards associated with RW management. Most of these standards reference WBS elements incorporated into the contract between DOE/NV and BN. Each WBS element contains more detailed information regarding the standard(s) that should be followed to mitigate the hazards associated with a particular work activity.

Work Smart Standards identified in other WSS WBS elements apply to the Radioactive Waste work activities when such other work activities conducted are associated with the facility, operation, or activity to be governed by the standards defined in this WBS. For example, training, construction, facility maintenance, occurrence reporting, Occupational Safety and Health Program, Environmental Protection Program, etc., contain specific elements that are applicable to the Radioactive Waste work activities as described in Section 1.

Standard	Title
10 CFR 830.120	Quality Assurance Requirements for Nuclear Facilities
<i>Note</i>	<i>Addresses Management Issues d, e, and g.</i>
10 CFR 835	Radiation Protection for Occupational Workers
<i>Note</i>	<i>Addresses radiation exposure protection. ES&H hazards 1 and 3; Management Issue d.</i>
40 CFR 191	Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level, and Transuranic Radioactive Waste
<i>Note</i>	<i>Applies to TRU waste only. ES&H hazards 1 and 4; Management Issue h.</i>
42 USC 2011, et seq.	Atomic Energy Act of 1954, as amended
<i>Note</i>	<i>Ensures proper management, production, possession, and use of radioactive materials. Provides DOE with authority for developing generally applicable standards for protecting the environment from radioactive materials as identified as ES&H hazard 1 and 4. Management issues a and h</i>
42 USC 20216	Low-Level Waste Policy Amendments Act
<i>Note</i>	<i>Section 3(b)(1)(d) establishes an equivalency for greater-than-Class C generated waste. ES&H hazard 1 and Management Issues a and b.</i>
DOE O 474.1 CRD	Control and Accountability of Nuclear Materials
<i>Note</i>	<i>Addresses nuclear material management. ES&H hazard 1 and Management Issue h.</i>
DOE/NV Agreement In Principle Appendix X	

Latest Revision: 1/26/05

Note Addresses multi-agency authority through the Joint Oversight Agreement with the state of Nevada for LLW. Management Issues c, e, and h.

DOE/NV-325

NTS Waste Acceptance Criteria

Note Addresses qualifications, record keeping, traceability, waste certification for RW destined for disposal at the NTS. ES&H hazards 1, 2, 3, 4, and 5; Management Issues d, e, g, and h.

Federal Facilities Agreement and Consent Order (FFACO) of 1996

Federal Facilities Agreement and Consent Order (FFACO) of 1996

Note Applies to environmental restoration activities in the state of Nevada. ES&H hazards 1, 2, and 4; and Management Issues a, b, c, d, e and h.

Federal Facilities Compliance Act Consent Order (May 1995)

Federal Facilities Compliance Act Consent Order (May 1995)

Note Applies to MW identified in the NTS Site Treatment Plan. ES&H hazards 1, 2, and 4; Management Issues b, d, and e.

Mutual Consent Agreement for the Storage of Low-Level Mixed Waste (June 1995 and modified November 1998)

Mutual Consent Agreement for the Storage of Low-Level Mixed Waste

Note Applies to MW not identified in the NTS Site Treatment Plan. ES&H hazards 1, 2, and 4; Management Issues b, d, and e.

NV M 435.1-1 CRD

Radioactive Waste Management

Note Revised by BCR 2002-006. Addresses life-cycle planning for the generation, storage, treatment, and disposal of Radioactive Waste. Management Issues b, and d. DOE O 435.1, Radioactive Waste Management is implemented through the NNSA/NV 435.1-1, Radioactive Waste Management Manual. Contractors and NTS users meet the requirements of DOE O 435.1 through conformance with NV M 435.1-1.

SARA Title III

The Emergency Planning and Community Right-to-Know Act of 1986 (also known as SARA Title III or EPCRA)

Note Provides an infrastructure at the state and local levels to plan for and report chemical emergencies. ES&H hazard 2, Management Issues d, e and h.

Nevada Administrative Code 444.842-444.976

Facilities for the Management of Hazardous Waste

Note As applicable to Mixed Waste generation, treatment, storage, transportation, and disposal. ES&H hazards 2, 3 and 4; Management Issues c, d, e, and g.

Settlement Agreement for Transuranic (TRU) Mixed Waste Storage Issues at the Nevada Test Site (June, 1992)

Settlement Agreement for Transuranic (TRU) Mixed Waste Storage Issues at the Nevada Test Site (June, 1992)

Note Applies to mixed TRU waste in storage. ES&H hazards 1, 2, and 4; Management Issues b, d, and e.

DOE M 473.2-2, CRD

Protective Force Program Manual

Note Applies only to those contractors that have responsibilities for administering the Protective Force Program. Updated by BCR 2004-046, 1/19/05.

Section 4 - Measurement Parameters:

Performance is measured by tracking and evaluating cost, schedule, and milestones through the Task Plan process and the Performance Evaluation Plan.

Section 5 - Implementation Considerations:

No significant changes are anticipated, although organizations may need to develop or revise and appropriately maintain operational and safety basis documentation to incorporate applicable requirements identified in DOE/NV M 435.1-1 CRD, "Radioactive Waste Management." Examples of operational and safety basis documentation include, but are not limited to, Execution Plans and NTS Waste Acceptance Criteria.

The requirements identified in DOE/NV M 435.1-1 CRD apply to subcontractors unless otherwise stated in contractual documents. No exemptions to the mandatory laws or regulations have been identified. No questionable implementation considerations have been identified concerning regulatory permits.

Section 6 - Work Environment:

RW management activities including generation, treatment, storage, disposal, and transportation are performed at locations such as designated offices, storage areas, and shallow-land burial cells (trenches and craters). Some activities require frequent travel to other work locations (i.e., another DOE facility).

Section 7 - Uncertainties or Issues:

Issuance of a RCRA Part B Permit for continued operation of the MW disposal unit is pending and may impose new requirements.

DOE's policy on Classified Material Operations is currently being reviewed. Programmatic changes may impact identified standards.

Section 8 - Training:

There are no known unique or special indoctrination, training, and/or certification requirements beyond those identified in the standards for this WBS. The WSS identified provide for a rigorous task analysis process to develop training programs commensurate with the hazards and risks associated with this Format 1.

Section 9 - Vulnerabilities:

No standard has been identified that can fully mitigate management risks associated with public perception. Public perception regarding RW activities may negatively impact performance of operations and missions at the NTS as well as the DOE Complex.

No standard has been identified that can fully integrate management and ES&H risks associated with the uncertainty of the volume of waste, schedule for generation, shipment and receipt of waste, and management of waste with no identified path forward. These risks may adversely impact resource and life-cycle planning.

2. 1.8 *Waste Explosives Disposal*

Latest Revision: 8/22/02

Section 1 - Work Activity:

This work activity involves the treatment of waste explosives at the Nevada Test Site. Energetic materials disposal can be divided into three activities: inspection, storage, and disposal. When disposing waste DoD ordnance, the proper DoD directives are employed.

Inspection:

- Weekly inspection of waste disposal site(s)
- Quarterly inspection(s) of explosive/ordnance magazine(s) materials to be destroyed

Storage of waste explosives/ordnance in approved magazines

Disposal:

- Placing and setting charges for explosives destruction
- Shotfiring

Post shot activities:

- Confirmation of destruction
- Shrapnel pickup
- Record keeping

(WBS 3.12, "Explosives Storage," is a related work activity.)

Section 2 - Hazards and Management Issues:

Specific hazards associated with explosive ordnance disposal include: the handling and use of high explosives, including the explosives used for the destructive blast as well as the explosives being destroyed.

The general hazards of the disposal operation are not unique. The explosive hazards are equivalent to those routinely faced by mining, construction, or explosives manufacturing personnel in industry.

Environmental degradation as a result of the treatment of hazardous wastes in the disposal operation is also a management issue.

Section 3 - Standards:

Standard	Title
40 CFR 260 Through 270	Federal Hazardous Waste Management Program
<i>Note Added by BCR 97-002, 10/15/98.</i>	
<i>Military Munitions Rule: Hazardous Waste Identification and Management, Explosive Emergencies, Manifest Exemptions for Transportation of Hazardous Waste on Right of Ways on Contiguous Properties; Final Rule.</i>	

2. 1.8 *Waste Explosives Disposal*

Latest Revision: 8/22/02

Department of Defense (DoD) Ordinance
Disposal Criteria

Department of Defense (DoD) Ordinance Disposal Criteria

Note Requirements for disposal of DoD wastes only.

Nevada Administrative Code (NAC)
444.850 - 444.8746

Disposal of Hazardous Waste

Note Note revised by BCR 2002-022.

The designated facility for disposal of waste explosives and munitions is a Permitted Hazardous Waste Treatment Unit.

Nevada Revised Statutes (NRS) 459.400 -
459.600

Disposal of Hazardous Waste

Note Note revised by BCR 2002-022.

The designated facility for disposal of waste explosives and munitions is a Permitted Hazardous Waste Treatment Unit.

29 CFR 1910.120(p)

Hazardous Waste Operations

Note Note revised by BCR 2002-022.

This work activity is performed at a permitted facility. The cited standard is specific to disposal activities and requires a site-specific safety program be developed that utilizes applicable parts of both 29 CFR 1910 and 29 CFR 1926. The resulting safety program should incorporate manufacturers' recommendations for disposal of waste explosives. The site-specific safety program, when developed and properly implemented, will adequately protect the individuals disposing of conventional explosives.

The mitigation of risks associated with the disposal of ordinance requires the use of trained personnel and specific disposal criteria for each type of ordinance.

Section 4 - Measurement Parameters:

Net Explosive Weight (NEW) detonated annually.

Documentation of no violations of standards annually.

Completion of required inspections in a timely manner.

Section 5 - Implementation Considerations:

Implementation may involve preparation of a unique safety and health plan (or section of plan) to address non-industrial or military ordinance.

Adopting the proposed standard would not affect operations.

This operation is also governed by the State of Nevada, Division of Environmental Protection, RCRA Part B Permit, NEV HW009, as a Hazardous Waste Treatment Facility. Operations must follow the Part B Permit requirements. Fines and loss of the Part B Permit are possible for findings of violation of the permit conditions.

2. 1.8 ***Waste Explosives Disposal***

Latest Revision: 8/22/02

Section 6 - Work Environment:

The energetic materials disposal work is an outdoor operation essentially no different from any other outside construction activity conducted by DOE/NV. Conditions are not considered extraordinary, but with respect to handling and storing explosives, one has to keep in mind the accepted operating temperature ranges of the substances in use, as well as lightning activity within a 5 mile radius and dust storms during low humidity conditions.

Section 7 - Uncertainties or Issues:

Any uncertainties in disposal operations are eliminated by following the manufacturers recommendations for the substance being destroyed.

Section 8 - Training:

There is required training detailed in the RCRA Part B Permit.

Additional training may be required for the disposal of non-industrial or military ordnance.

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

This activity describes the comprehensive environmental restoration program for DOE Nevada. Major elements include:

- Assessing and remediating sites containing Resource Conservation and Recovery Act (RCRA) regulated materials, hydrocarbon contaminated soils, abandoned septic tanks, contaminated mud pits, radioactively contaminated soils, and removing or upgrading underground storage tanks;
- Collecting waste, soil, and water samples and performing geophysical surveys to determine below ground characteristics;
- Coordinating health physics, construction, and waste handling support and supervising and documenting field activities;
- Preparing closure plans, health and safety plans, work plans, radiation control permits, and the final closure reports;
- Maintaining extensive project files on completed projects to date and the available information of future projects. Records management activities are described in WBS element 1.5;
- Designing and implementing a groundwater characterization program leading to the development of a hydrologic model for the NTS;
- Maintaining and developing computer data bases in support of compliance activities for the Federal Facility Agreement and Consent Order (FFACO);
- Locating and describing all known NTS sites requiring assessment or remediation.

Non-NTS Nevada locations include the Tonopah Test Range, the Project Shoal site, the Central Nevada Test Area and portions of the Nellis Air Force Range including the Double Tracks and Clean Slates I, II, and III safety shot sites. Remediation sites are also located in Alaska, Colorado, New Mexico, and Mississippi where subsurface nuclear tests were conducted.

It is possible to encounter TSCA wastes (PCBs) during environmental restoration work. The waste would be managed and disposed of in accordance with WBS 2.1.2. CERCLA would only come into play if the DOE experiences a release that must be reported to the National Response Center, or if DOE sites are placed on the National Priorities List. At this time, DOE/NV is managing wastes, including historic releases, under RCRA (40 CFR 264 Subpart F which introduces the concept of Solid Waste Management Units, and 40 CFR 264 Subpart S, Corrective Action for Solid Waste Management Units).

The environmental restoration work activity does not include the actual management and disposal of the waste that is generated during remediation work. Refer to WBS 2.1.2 (PCBs), WBS 2.1.3 (Solid Waste), WBS 2.1.4

2. 2 *Environmental Restoration*

Latest Revision: 9/30/96

(Hazardous Waste), WBS 2.1.5 (TRU Waste), WBS 2.1.6 (Mixed Waste), WBS 2.1.7 (Low Level Waste), and/or WBS 2.1.8 (EOD) for this information. The construction activities are covered under the WBS 2.8, Construction, and the transportation activities are described in the WBS 3.6, Transportation.

Section 2 - Hazards and Management Issues:

The hazards associated with performance of the work include those that normally exist in industrial and construction environments. Those hazards specifically associated with this work activity include:

Heat exhaustion/stroke resulting from wearing level A, B, C personnel protection equipment (PPE) in high temperatures.

Acute and chronic personnel hazards associated with the materials being remediated including exposure to biological hazards, hazardous chemicals, and radionuclides.

Contamination of the environment from releases of contaminated materials and waste.

Section 3 - Standards:

The following are the necessary and sufficient standards:

Standard	Title
29 CFR 1910.109	Explosives And Blasting Agents For General Work
Note	<i>Requirements for handling and use of explosives, except for 1910.109(d)(1)(iv), Transportation of explosives which is covered by IME Standard 22.</i>
29 CFR 1910.120	Hazardous Waste Operations and Emergency Response
Note	<i>Addresses hazardous waste site activities such as: organizational structure, work plan, site-specific safety and health plan, safety and health training, medical surveillance, procedures, and interfaces between general and specific work activities.</i>
American National Standards Institute (ANSI)	Applicable Standards
Note	<i>Applicable standards for characterization activities like soil sampling and geophysical surveys. Specific standards used are determined on a case-by-case basis depending upon the type of activity, selected equipment, and the physical environment, e.g., soils conditions, moisture, rock type.</i>
American Society for Testing and Materials (ASTM)	Applicable Standards
Note	<i>Applicable standards for characterization activities like soil sampling and geophysical surveys. Specific standards used are determined on a case-by-case basis depending upon the type of activity, selected equipment, and the physical environment, e.g., soils conditions, moisture, rock type.</i>
Federal Facility Agreement and Consent Order (FFACO)	Federal Facility Agreement and Consent Order (FFACO)
Note	<i>The FFACO between DOE/NV and the State of Nevada wherein DOE/NV agrees as a matter of comity to enforceable cleanup milestones for Corrective Action Units (CAUs) which were previously DOE self-regulated under the Atomic Energy Act.</i>

2. 2 *Environmental Restoration*

Latest Revision: 9/30/96

Nevada Administrative Code (NAC)
444.850 - 444.8746

Disposal of Hazardous Waste

Note *RCRA is the regulatory driver for remediation projects involving RCRA regulated materials and wastes and contains significant civil and criminal fines and penalties.*

Nevada Administrative Code (NAC)
459.9921 - 459.999

Storage Tanks

Note *These regulations define reportable releases in terms of volume and concentration, define the minimum standards for construction, operation and monitoring of USTs, and set time limits for upgrading and closing USTs.*

Section 4 - Measurement Parameters:

An important objective of environmental restoration is to mitigate releases from sites or facilities that have harmed or have the potential to harm the environment or human health. Some measures of the restoration effort are:

- Reducing the levels of contaminants in the environment to acceptable, pre-determined levels
- Number of unplanned environmental releases during the remedial effort
- Acceptance of closure documentation/site closure by NDEP
- Post-closure monitoring data meets defined criteria
- Cost and schedule performance
- Customer satisfaction

Section 5 - Implementation Considerations:

Implementation of the Federal Facility Agreement Consent Order (FFACO) will prioritize what environmental restoration projects are to be performed. DOE/NV has responsibility for approximately 2500 CAS locations which require some sort of corrective action. Those sites range from small areas where trash has been dumped to areas where hazardous chemicals and/or radionuclides have contaminated the local environment. Each site is referred to as a Corrective Action Site (CAS). CASs that are similar in the nature of the contamination or are geographically close have been grouped into Corrective Action Units (CAUs). The FFACO stipulates penalties for not remediating CASs on the agreed to schedule. Final closure is reached when all CASs within a CAU are remediated.

The standards presented in section 3 have been implemented. Cost savings could result from:

- Eliminating the requirement to prepare an Occurrence Report every time a release is discovered beneath an underground storage tank that is being removed (the release occurred years previously). Preparing an occurrence report for an old environmental release does not provide benefit and requires many hours effort to produce and track. Releases are already reported to the state regulator through another process.
- Eliminating the need for stand-alone pre-task hazard review, job safety analysis, hazard assessment, safety

2. 2 *Environmental Restoration*

Latest Revision: 9/30/96

analysis, and Health and Safety Plan for each remediation site. The project/site specific hazard assessment and the project site-specific Health and Safety Plan are more than adequate to cover the work activities. For more information on these work activities, see WBS 2.12 Hazard Assessment.

· Revising the waste acceptance process required to dispose radioactive waste at the NTS. That process requires excess sampling and analysis and a lengthy audit and approval process and is more restrictive and costly than the acceptance process required to dispose radioactive waste at commercial disposal facilities. For more information on these work activities, see WBS 2.11 Radioactive Waste Acceptance Program.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

Any incident resulting in an exposure to a worker or a release to the environment would be damaging to perception of remedial operations. Post-closure monitoring results above approved action levels would require further corrective actions.

Section 1 - Work Activity:

The work activity involved with surface mining is to supply aggregate varying in size from large rock and rip-rap used as building stone, to finely screened sand and gravel used in concrete, road surfacing, and other construction applications.

Surface mining can be divided into the following activities:

Stripping

- Removal of the unusable material over the deposit by blasting or ripping the material.
- Transporting unusable material to a dump area within the mining complex, but away from the area to be mined.

This stripping is exclusive to mining and does not apply to ground-clearing operations for construction, environmental restoration or other activities.

Mining

- Blasting or ripping the material to be mined to loosen it so it can be loaded.
- Loading and transporting the material to the crushing and screening, treatment plant, or loading point (if quarried stone).

Treatment

- Crushing (or sizing) material.
- Washing or screening of the crushed material to produce a final product.
- Waste water is collected in a series of ponds and reused.

Handling of the final products

- Stockpiling or containerizing the usable product for shipment to customer.
- Stockpiling or disposing of unusable material from the treatment plan.

Necessary and sufficient aspects of transportation will be discussed under WBS 3.6, Transportation.

Section 2 - Hazards and Management Issues:

Hazards specific to surface mining include:

- Injury or illness associated with heavy construction equipment, drilling (during blasting operations) conveyors, screens, and other processing equipment,
- Injury due to working at heights,
- Injury due to failure of the walls of the pit,

2. 3 *Surface Mining*

Latest Revision: 9/30/96

- Injury or illness from inhaling dust from mining operations,
- Deterioration of air quality due to dust caused by drilling, blasting, transporting or crushing materials, and
- Water pollution from the discharge of waste water to the ground surface.

Section 3 - Standards:

Standard	Title
30 CFR 56	Mineral Resources - Safety and Health Standards Surface Metal and Non-metal Mines
<i>Note Requirements for worker protection from all hazards cited in the WBS including the actual blasting operation itself (however, 30 CFR Part 56.5005(b), respirators, is not included because respirators are covered by 29 CFR 1910.134 or 1926.103 from WBS 4.2.2). Surface Metal and Non-metal Mines are the most applicable standards for meeting the Necessary and Sufficient requirements for surface mining. MSHA and OSHA have reached an agreement in the state of Nevada that MSHA regulates surface mining operations.</i>	
Nevada Administrative Code (NAC) 445.070 - 445.241	Water Pollution
<i>Note Governs water discharges to waters of the state, and implement the Clean Water Act. No permits are currently necessary for water discharges from surface mining at the NTS.</i>	
Nevada Administrative Code (NAC) 445B.001 - 445B.395	Air Pollution
<i>Note Governs air quality in the state of Nevada, and implement the Clean Air Act through a system of permits.</i>	

Section 4 - Measurement Parameters:

Cost per unit weight of mined material

Quantity mined per unit time

Section 5 - Implementation Considerations:

Adopting the proposed standards would have no adverse effect. Since MSHA does not have jurisdiction at the NTS, DOE/NV and its contractors would have to decide how to handle the notifications required by the MSHA standard.

Section 6 - Work Environment:

The work environment for surface mining personnel at the NTS mimics that of any surface mining operation in this part of the country.

Section 7 - Uncertainties or Issues:

While reclamation is not required by federal or state law (sand and gravel operations are specifically exempt from state mining laws), DOE/NV may elect to perform reclamation after the completion of mining. Reclamation could take the form of grading, correction of drainage patterns, or revegetation.

2. 3 *Surface Mining*

Latest Revision: 9/30/96

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

None

Section 1 - Work Activity:

The major activities associated with underground operations at the NTS include:

Excavation - Excavation of drifts and other underground openings (alcoves, stations, keyways, etc.). Methods employed may include conventional (drill, blasts, muck) or utilizing mechanical excavation.

Ground Support - Process of preventing fall or collapse of ground in excavated openings. Methods may include a variety of rock bolt types, typically with wire mesh. Support systems may also include other elements, such as shotcrete, mats, stulls, sets, etc).

Underground Transportation - Transport of muck, personnel, equipment and supplies from surface support areas to underground locations. Systems may include rail systems, trackless equipment and handcars.

Utility Systems Operations - Installation and operation of various utility systems. These might include compressed air, non-potable water, high and low voltage power systems, instrument power, lighting, communication and signal wires, drainage (pump) lines, etc.

Construction - Installation of general construction elements, e.g., concrete slabs, alcoves, doors, containment plugs and structures, power circuits, experimenter data collection systems, HVAC, etc.

Shaft Operations - Maintaining shafts for the purpose of access to underground facilities for personnel, materials and utility system routing. Activities also include shaft maintenance..

Surface Operations - Use of surface facilities and storage areas are necessary to operate the underground facility. These facilities may include; hoist house, headframe, muck dump, muck pile, change house, compressors, and shops.

Section 2 - Hazards and Management Issues:

General Hazards associated with Underground Operations include:

- . Those related to use of mechanical excavation and material handling equipment.
- . Use of explosives.
- . Potential fall of ground prior to and/or during installation of initial ground support.
- . Those related to transportation such as train derailment, crushing or struck-by haulage equipment, and movement of explosives.
- . Insufficient ventilation for maintenance of air quality.
- . Electrocution or shock hazards.
- . Fall, dropped-on, or caught-in hazards associated with shaft and hoist operations.
- . Contact with high energy systems such as compressed air.
- . Explosion hazards due to drilling or mining into expended test cavities.
- . Exposure to radiation, both ionizing and non-ionizing.
- . Slump of muck piles (primarily at surface).

2. 4 *Underground Operations*

Latest Revision: 1/24/03

- . Entrapment due to fire or ground collapse.
- . Escape to the surface and protection of personnel underground in emergency situations is a paramount concern.
- . Exposure to noise and dusts.
- . Hazards unique to a given test/experiment and the related diagnostic techniques utilized.

Section 3 - Standards:

The following parts of the Codes of Federal Regulations (CFR) are specifically applicable to this WSS/WBS. Standards governing the use of lasers, hazard communications, and occupational noise exposure can be found in Section 4.2.2, Industrial Hygiene, of this WSS set.

NOTE: Where the referenced standards are unclear or inadequate, contact the Office of Primary Responsibility for this Order, NNSA/NV ESHD, for guidance.

FLAMMABLE LIQUID CONTROL. The use of flammable liquids underground which have a flash point below 100 degrees Fahrenheit must be strictly controlled and monitored in accordance with a written plan or procedure. Flammable liquids which have a flash point below 100 degrees Fahrenheit must not be stored underground.

Standard	Title
30 CFR 48 (only Parts 48.2, 48.5, 48.6, 48.8, and 48.11) <i>Note</i> Added by BCR 2002-034.	Training and Retraining of Underground Miners (and Other Personnel Working Underground)
30 CFR 49 <i>Note</i> Added by BCR 2002-034.	Mine Rescue Teams
30 CFR 57 <i>Note</i> Added by BCR 2002-034.	Safety and Health Standards for Underground Metal and Nonmetal Mines
30 CFR 58 <i>Note</i> Added by BCR 2002-034.	Health Standards for Metal and Nonmetal Mines
NV O 440.X <i>Note</i> Added by BCR 2002-025. Modified by BCR 2002-034 (the word "Standards" removed from title)	Underground Operations Safety and Health

Section 4 - Measurement Parameters:

- . Achievement of scientific and engineering objectives.
- . Unplanned air quality excursions form acceptable values.
- . Unplanned outages of utility systems.

Section 5 - Implementation Considerations:

As described in Section 1, "Activity", above, this WBS encompasses the construction and operation of

2. 4 *Underground Operations*

Latest Revision: 1/24/03

underground facilities in support of the conduct of tests and experiments. The hazards associated with each test or experimental activity will be identified and controlled through the work planning and authorization processes applicable to that project or program. This may include the identification of requirements unique to a test or experimental activity that are beyond the scope of this order.

The National Nuclear Security Administration, Nevada Operations Office (NNSA/NV) Environment, Safety, and Health Division (ESHD) is to be used wherever the Mine Safety and Health Administration or Occupational Safety and Health Administration authorities are referred to.

Section 6 - Work Environment:

Remote locations ranging up to 45 miles from Mercury are common. Underground activities accessed by shafts, tunnels or adits in a variety of geologic settings.

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

This work activity includes conventional activities associated with drilling and logging programs. Included in the work activity are all drilling and associated activities such as equipment rig-up and rig-down, drilling, completion, testing and geophysical logging. Site design and preparation are covered by WBS 2.7.1 "Engineering Design" and WBS 2.8 "Construction." All work activities beyond hole completion, except for geophysical logging, are covered by other WBS elements.

Examples of borehole types which may be drilled at DOE/NV include water production, monitoring, geotechnical, geophysical, emplacement and post-shot.

Section 2 - Hazards and Management Issues:

Activities described above are subject to general construction and operation of heavy equipment safety and health hazards. Geophysical logging operations may include the unique hazards common to radioactive source utilization.

Some drilling activities such as post-shot drilling and environmental monitoring, may expose personnel to radiological hazards. The mitigation of this hazard (job planning, dosimetry, training) are addressed in WBS 4.4, Radiological Protection.

The environmental hazard of greatest concern from drilling operations is the contamination of groundwater. State statutes and codes are designed to preserve and protect the waters of the state. This is stated explicitly in NRS 534.020:

- Underground waters belong to public and are subject to appropriation for beneficial use; declaration of legislative intent.
- All underground waters within the boundaries of the state belong to the public, and subject to all existing rights to the use thereof, are subject to appropriation for beneficial use only under the laws of this state relating to the appropriation and use of water and not otherwise.
- It is the intent of the legislature, by this chapter, to prevent the waste of underground waters and pollution and contamination thereof and provide for the administration of the provisions thereof by the state engineer, who is hereby empowered to make such rules and regulations within the terms of this chapter as may be necessary for the proper execution of the provisions of this chapter.

Wells drilled in the state of Nevada are governed by Nevada Administrative Codes (NAC) and Nevada Revised Statutes (NRS). Wells drilled by or for the DOE on the Nevada Test Site (NTS) are exempt from these requirements by virtue of NRS 534.00, which exempts federal reservations from these requirements. However, as a matter of comity it is recommended that these codes and statutes be complied with, unless compliance is deemed inappropriate.

Section 3 - Standards:

2. 5 *Drilling*

Latest Revision: 9/30/96

Standard

Title

10 CFR 39

Licenses and Radiation Safety Requirements for Well Logging

Note *Standards for geophysical logging which utilize a nuclear source, for both inside and outside NTS boundaries, are governed by 10 CFR Ch. I, Part 39. DOE personnel must ensure compliance with the following sections for nuclear logging performed by a sub-contractor: the contractor is required to be licensed in accordance with sections 39.11 and 39.13; operations may begin only after a written agreement has been signed designating lost source responsibilities as described in 39.15; the contractor is responsible for equipment safety precautions covered in 39.31, 39.33, 39.35, 39.37, 39.39, 39.41, and 39.43; wells without surface casing are regulated by section 39.51; the contractor is responsible for personnel safety requirements as defined by sections 39.61, 39.63, 39.65, 39.67, and 39.69; and the contractor is responsible for security and records defined in 39.71, 39.73, 39.75, and 39.77.*

Department of Labor (DOL) Interpretation
Letter, February 1982

Interpretation of 29 CFR 1910 for Drilling

Note *In February 1982, the USDOL, OSHA issued an interpretation letter regarding the standards that are applicable to drilling operations, i.e., water well, oil, and gas. The Agency respected the requests of the International Association of Drilling Contractors (IADC) by using the general industry standards, 29 CFR 1910, specific industry consensus standards. The interpretation letter is used as a basis for compliance officers to cite drilling contractors when they inspect.*

Nevada Administrative Code (NAC)
534.280 - 534.298

License To Drill Wells

Note *Required for wells drilled by or for the DOE outside the NTS boundaries. These subsections describe the processes for qualification and certification of well drilling personnel. Other analogous state statutes will apply on a project-specific basis for drilling operations outside of the State of Nevada.*

Nevada Administrative Code (NAC)
534.300 - 534.470

Drilling, Construction, and Plugging of Wells - Miscellaneous Provisions

Note *These subsections describe: 1) Administrative Requirements, 2) Drilling and Completion Documentation, 3) Materials and Processes Required to Protect State Waters, and 4) Preservation of State Waters. Other analogous state statutes will apply on a project-specific basis for drilling operations outside of the State of Nevada.*

Section 4 - Measurement Parameters:

Project cost and schedule.

Achievement of scientific and engineering objectives.

Protection of groundwater resources.

Section 5 - Implementation Considerations:

The Nevada groundwater protection codes identified in section 3.0 above are implemented by current standard operating guidelines.

Disclosure of project details to outside agencies is sometimes not possible due to the classified nature of some NTS operations.

Section 6 - Work Environment:

N/A

2. 5 *Drilling*

Latest Revision: 9/30/96

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

The work activity is the development of software to support instrumentation and R&D activities. This includes software to control and calibrate instrumentation systems, software to reduce and analyze the data from them and software to model them. The complexity of software written varies considerably. Projects which require critical software to be written or for which software is the major deliverable follow a general engineering process which consist of eliciting requirements from customers; designing a software system to meet the requirements; writing the software; testing the software; and producing the necessary documentation.

The requirements and specifications for the software to be produced are provided by the customer and are usually verbal and quite vague. Software may be, but is usually not, the primary product of the project that produces it. The software products are typically used by five people or less. Most software is only used internally and is not delivered to an external customer. The developer is generally the end user. Occasionally critical software is developed.

The design of a data acquisition system may include software which is used to control the system for proper timing, sequencing, and data acquisition. The software development portion generally represents a small part of the design and buildup. Software is also written for data analysis which may or may not be the final deliverable to a customer. Most analysis software is used internally and may evolve as new techniques are identified. Some software is written to model physical phenomena and the code may be the tangible deliverable to the customer. The most significant parts of modeling projects are developing and understanding the physics or science of the phenomena being modeled. The definition of critical is not driven by the type of software but its application and the potential of its failure to cause large financial loss, safety problems or loss/degradation of mission (IEEE Standard 610.12-1990).

Section 2 - Hazards and Management Issues:

The work activity of software development poses no hazards to the workers, the public, or the environment. Most software development takes place in an office environment with typical office hazards. Some work may occur in a laboratory or field environment with a potential to be around ionizing radiation, lasers, microwave, high voltage, and weather.

There are three predominant management issues relating to software development. The first is a failure of critical software which results in significant financial loss. This can be due to a defect in the original software, a defect which is introduced when the software is modified, incomplete testing, incomplete reviews, or poor configuration management. The second is the potential for non-critical software to fail to perform as expected because of inadequate or inaccurate communication between the software developer(s) and the customer(s) or reasons cited above. The third is the software not being able to be enhanced, modified or effectively used in the future because of poor documentation during the development process.

Section 3 - Standards:

Standard	Title
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2. 6.1 *Technical Software Development*

Latest Revision: 9/30/96

Institute of Electrical and Electronic
Engineers (IEEE) 730-1989

Standard for Software Quality Assurance Plans

Note *Critical software should be identified and the means used to mitigate the risks should be documented, unless the customer specifies otherwise, in a software quality assurance plan which conforms to IEEE Standard 730-1989 Standard for Software Quality Assurance Plans. This standard provides the framework to mitigate the issues for critical software.*

Section 4 - Measurement Parameters:

The measurement parameters for software development are (1) Did the delivered product meet all of its specifications?, (2) Was it delivered in accordance to the schedule?, and (3) Was it delivered within its budget?

Section 5 - Implementation Considerations:

IEEE Standard 730-1989 cited above references other IEEE Standards to help mitigate the issues listed in Section 2 for critical software. This Standard should be implemented by internal procedures that are driven by customer requirements and the complexity and criticality of the software. The second management issue (non-critical software failure) could be covered by an internal procedure for project planning with a small section devoted to problems peculiar to software. The third issue (lack of maintainability) should be addressed in two places. First, the project planning process should require addressing maintainability and documentation requirements in the early planning stages. Second there should be an internal procedure for documentation and coding.

There are existing standards that could be used as starting points for the last two management issues. IEEE Standard 830-1984, "Guide for Software Requirements Specifications," and IEEE Standard 1058.1-1987, "Standard for Software Project Management Plans," are suitable starting points for addressing failure of non-critical software. IEEE Standard 1016-1987, "Recommended Practice for Software Design Descriptions," and IEEE Standard 1063-1987, "Standard for Software User Documentation," are suitable to address maintainability.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

The work activity involved with assembly of systems and components is the actual fabrication which could include manufacturing, welding, soldering, wiring, sheet-metal work, running conduit, and other work processes to produce an end product. The system/component could be a small module or a large complex instrument canister/rack used for nuclear testing. Some projects are proof of concept experiments which require no manufacturing or assembly standards and are conducted on a workbench in an R&D environment. Work may be conducted inside a large facility, a small laboratory, or could occur in a field environment. Start of the assembly process involves identification of resources, very specific planning with control points, and procurement of items. Engineering design, which covers the identification of assembly and manufacturing standards, is covered in WBS element 2.7.1. Drafting is covered in WBS elements 2.7.2. Writing of technical software is covered in WBS element 2.6.1, construction is covered under 2.8, and procurement in 1.3.2.

Assembly of components/systems can generally be divided into the following activities:

- Purchase or fabricate special components
- Assembly of qualified work team and planning the assembly process to develop milestones, cost controls, schedules, testing requirements, and safety considerations.
- Perform the assembly operations
 - * Perform actual work process.
 - * Inform customer of work status and any special hold points or problems.
- Monitor work activity for cost, time schedule, milestones, etc.
 - * Perform cost effectiveness evaluations
- Work inspection process
 - * Document product performance necessary to satisfy internal and external customer needs.
- Final testing and delivery
 - * Conduct performance test and functional checks to verify system/component meets original criteria.
 - * If tests are successful, deliver to customer.
 - * Write final report to provide traceability and documentation.
 - * Document lessons learned.

Section 2 - Hazards and Management Issues:

Specific hazards in assembly of components/system are:

- Facility/Site wide: Occupational such as lifting, cuts, falls, noise, minor chemical exposure, burns from soldering/welding, driving and possible electrical shock. Special operational hazards are analyzed each time. Assembly and testing phase may occur in the presence of high voltage, lasers, microwaves, and ionizing radiation.
- Environment: Primarily field, concerning spills of hazardous materials or chemicals.
- Management issues involved in assembly of components/systems are:
 - Reliability and Schedule: The purchase of low-bid items has resulted in unusable or unreliable components. The paperwork involved and length of time to complete a purchase and receive the items impact the whole work process.
 - Quality: Conformance to customer's requirements for product performance, schedule, and cost.

Section 3 - Standards:

Standard	Title
10 CFR 830	Nuclear Safety Management
<i>Note Applicable to activities at nuclear facilities only.</i>	
29 CFR 1926	Safety and Health Regulations for Construction
<i>Note The "General Duty Clause", 29 CFR 1910 for general industry operations and 29 CFR 1926 for construction activities if properly applied will mitigate the employee hazards associated with this activity.</i>	

Section 4 - Measurement Parameters:

- Was the work activity completed on time?
- Was the activity within budget?
- Did the product meet the customers performance requirements?

Section 5 - Implementation Considerations:

Prior to any assembly work, the customer's request is taken through an engineering design. The design identifies specific requirements such as software, hardware, specifications, tolerances, and standards. This information is incorporated into a project plan which includes budgets and defines deliverables. The Project Plan then calls for the appropriate standards based upon the criticality and complexity of the system.

Vendor/procurement issues may be dealt with in several ways. Three possibilities are discussed below.

Use only pre-qualified suppliers. Develop a list of technical and quality standards that all suppliers must meet. Use best/stringent industry standards. Evaluate and qualify all suppliers. Use periodic assessment to maintain an acceptable performance level.

Use a cost to qualification ratio that assures the best supplier rather than the cheapest. This requires a team to develop six (6) to ten (10) specific technical, quality, performance requirements for purchase. All suppliers are given this list of evaluators in order of priority. Total points are used to define the best supplier. These points are divided into the bid cost and the best (lowest) ratio is the successful supplier.

Use an accepted industry standard such as ISO 9000, 9001, 9002 to assure a measurable and meaningful level of quality. This standard is useful as a tool to evaluate potential suppliers. Full certification might not be required but documented self-assessment could be sufficient.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

A potential business line might be the short run production of specialty components. Certification as an ISO-9000 series supplier might enhance credibility of NTS as a manufacturer and/or may be required to qualify as a supplier. As a business decision, consideration should be given to the cost/benefit of ISO certification as an asset to the potential business line.

Section 1 - Work Activity:

The work activity consists of the management of scientific data associated with the DOE Nevada contract. The work activities are: data acquisition (which can include the operation of the acquisition system); data analysis and reporting; and data storage (and associated retrieval processes). Each activity separately may constitute a complete project and produce a deliverable to the customer (data analysis for instance). Many different types of data are managed. These include (but are not limited to) handwritten documents such as journal entries and log sheets; hard-copy such as printouts and reports; film such as documentary photographs, weapons test oscilloscope traces, aerial photography; video tapes from presentations, documentary activities and scientific data acquisitions; and digital information stored on disks, tapes, magnetic cards.

The engineering design of the data acquisition system is covered under WBS element 2.7.1. Assembly and characterization of the acquisition system is covered under WBS element 2.6.2. The calibration process is covered under WBS element 3.10. The development of scientific software is covered under WBS element 2.6.1. Quality assurance issues are covered in WBS element 4.7. Retention of data, notes, drawings, etc. are covered under WBS element 1.5.1.

Section 2 - Hazards and Management Issues:

These work activities are conducted within a variety of environments and may include, office, laboratory, vehicle, aircraft, trailer, and field. The hazards may include, high voltage, microwave radiation, laser, ionizing radiation, and typical laboratory and office hazards.

Management issues are that data must be acquired, analyzed, and stored in a manner which satisfies customer requirements, complies with good business and scientific practice and protects the information from loss. Data must be complete enough to withstand scrutiny in possible litigation actions.

Section 3 - Standards:

Standard	Title
Customer Specified Requirements	Customer Specified Requirements
<i>Note</i>	<i>This work activity is governed by other applicable program requirements developed through other WBS elements. The management issues are not mitigated by federal, state, local or industry orders or standards. The management issues are mitigated by implementing sound accepted business/scientific practices and adopting any customer specified requirements or standards in a project plan.</i>

Section 4 - Measurement Parameters:

Data acquisition: customer requirements met, completeness of data set, cost, on time.

Data analysis: analysis meets customer requirements, turn around time, cost

Data storage/retrieval: success rate of data retrieval, percent of retrieved data still usable

Section 5 - Implementation Considerations:

Satisfaction of customer needs for all work activities is assured by documenting customer requirements, specifications, and records disposition in each project plan. The plan will contain the necessary detail to ensure that project scientists/engineers will be able to properly conduct data acquisition, analysis and reporting, and data archiving. Some implementation considerations for the three major work activities are discussed below. The project plan should address these as necessary.

DATA ACQUISITION All pertinent information describing the acquired data and the acquisition methodology will be recorded and complete enough that an individual, qualified in the particular discipline, can understand and properly analyze the data. In all routine data acquisition projects, an appropriate prompting method (checklist, pre-printed log sheet, digital menu, etc.), will be utilized to guarantee that appropriate requirements have been considered. Any equipment whose calibration can affect final analysis results must be calibrated/characterized and operated according to the supplier's documentation or special application requirements. The project plan will contain the necessary information to perform an experiment or project that calls for non-routine acquisition methods.

DATA ANALYSIS Data analysis methods must be chosen by qualified personnel to provide the deliverables requested by the customer. Where routine products are involved, routine procedures will be used. When non-routine products are desired, methods of analysis will be developed by qualified personnel. In all cases, documentation notes will be made which are sufficient to allow another qualified individual to understand the analysis procedures and to repeat them if necessary.

DATA STORAGE Data will be stored appropriately. Media manufacturer's defined criteria for long-term storage and duplication will be met. The primary considerations for retention of data are performance based. Data must be stored so that it can be reliably retrieved such that a qualified individual can understand how the data was taken and analyzed. The process should then be repeatable based on the stored information. Original unprocessed data must be stored to allow for future processing if required as more advanced techniques become available.

Retention requirements for records will be followed and are addressed in WBS element 1.5 Administrative Services.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

It is frequently necessary to retrieve or re-analyze data from as far back as the 1970s. Evolving technology may render data retrieval systems obsolete such that equipment may no longer exist to read outdated or no longer used media. The media itself may also deteriorate over time which could render it unreadable. The Readiness Program should address archiving and retrieving data critical to the stockpile stewardship mission.

2. 6.4 *Spill Testing*

Latest Revision: 9/30/96

Section 1 - Work Activity:

The Spill Test Facility's (STF's) mission is to provide a unique facility that affords the opportunity for private industry, governmental agencies and other users to conduct hazardous materials testing and training. It is the only facility of its kind and is ideally suited for commercial and governmental test sponsors to develop verified data on prevention, mitigation, clean-up, and environmental effects of toxic and hazardous materials.

The STF has been utilized for releases of highly hazardous chemicals to develop and evaluate the dispersion patterns, mitigation techniques, remote monitoring capabilities and combustion characteristics of selected materials. The STF has also been used to assist the users in developing emergency planning guidelines that are required under United States Public Law 99-499, the Superfund Amendments and Reauthorization Act of 1986 (SARA), and other federal, state and international laws and regulations.

Spill testing is conducted according to the safety requirements identified via Process Safety Management. For each test or test series, a test plan is developed, reviewed, approved, and implemented to govern the specific testing operations. Test plans include test description, hazard analysis, and safety plans, and are intended to address specific environment, safety, and health risks and requirements. These plans also satisfy a state of Nevada requirement listed in the air quality permit which authorizes spill testing.

Transportation of chemicals to the STF is discussed under WBS 3.6.

In addition to tests that have been conducted at the STF, examples of ongoing work activities include:

- Construction/assembly of test sponsor equipment.
- Conduct spill testing.
- Data collection during test.
- Clean-up and site restoration at the completion of test.
- Maintenance of test equipment

Section 2 - Hazards and Management Issues:

Workers at the STF experience the same general construction hazards as other work at the Nevada Test Site (NTS). Because of some of the specialized work that takes place during the build-up, testing and clean-up phase of each test, there are some unique hazards and management issues encountered.

Some of the specific personnel hazards associated with test activities at the STF include:

- Hazardous chemical handling.
- Hazardous chemical storage.
- Working in extreme weather conditions.

2. 6.4 *Spill Testing*

Latest Revision: 9/30/96

- Working with energized sources (mechanical, chemical, and electrical).

Environmental hazards include degradation of air or water due to the release of chemicals.

Management issues center around the absence of federal or state standards for worker protection covering deliberate controlled releases of hazardous chemicals at or above regulated concentrations.

Section 3 - Standards:

Standard	Title
29 CFR 1910.119	Process Safety Management of Highly Hazardous Chemicals
Note	<i>Requirements for specifically controlling process safety. This "Pre-Startup Safety Review" should be used to adapt the facility requirements to each individual test.</i>
40 CFR 302	Designation, Reportable Quantities and Notification - Notification Requirements
Note	<i>This activity is exempt from reporting requirements under CERCLA, Section 101, as codified in 40 CFR 302.6 (Notification Requirements), because it is a federally-permitted facility. The state of Nevada is an authorized state with an approved Implementation Plan for permitting and enforcement under Clean Air Act regulations. Unlimited spills will be subject to the standards identified for the Environmental Protection Program, WBS 4.5.</i>
40 CFR 68	Chemical Accident Prevention Provisions
Note	
Nevada Administrative Code (NAC) 445B.001 - 445B.395	Air Pollution
Note	<i>This standard governs the air quality permit for the testing work.</i>
Nevada Administrative Code (NAC) 459.952 - 459.9542	Regulation of Highly Hazardous Substances
Note	<i>This regulation mimics OSHA's process safety management process, but adds some requirements unique to Nevada. The spill test facility is the only place at the NTS which must comply with these regulations.</i>
42 USC 7403, et seq.	Clean Air Act
Note	<i>Directs DOE, EPA and a federally-designated coordinating council to establish the STF and operate it as a field laboratory to develop and evaluate predictive models for atmospheric dispersion, and to evaluate the effectiveness of hazard mitigation and emergency response technology and transportation-related accidental releases of hazardous chemicals.</i>

Section 4 - Measurement Parameters:

- DOE/NV satisfaction with facility operation and maintenance.
- User and DOE/NV satisfaction with STF cost containment.

2. 6.4 ***Spill Testing***

Latest Revision: 9/30/96

- User satisfaction with STF schedule management.

- User satisfaction with the quality of data collection.

Section 5 - Implementation Considerations:

Process Safety Management is implemented at the spill test facility. The Appendix to 29CFR1910.120 will be considered when developing the personal protective equipment requirements or other hazard mitigation features for the operation of this unique facility.

Nevada Air Quality Operating Permit 2625 (expiration 11/2/97) , issued to DOE/NV under the state's Clean Air Act authority contains certain requirements that must be complied with, including the submission of an Operations Plan. Some of these requirements, including the preparation and submission of the Operations Plan, are performed by DOE personnel.

Section 6 - Work Environment:

STF personnel are required to work in outdoor environments in all types of climatic conditions. Personnel are required to wear different levels of Personal Protective Equipment while performing certain job functions. Personnel also work in indoor office environments.

Section 7 - Uncertainties or Issues:

The recent changes in the state of Nevada regulations regarding air quality permits, the reduction of state staff available to process these permits and specifically DOE/NV's intention to stay at or below the Class II permit release limits may have an adverse effect on our ability to accept certain test programs at the site. This will also impact the renewal of the permit that expires in 11/2/97.

Section 8 - Training:

Mandatory training outlined in the ES&H standards that pertain to the STF.

STF employees receive test specific training which includes but is not limited to the following:

- Process/test description.
- Chemical awareness (HAZCOM).
- Personal Protective Equipment use and selection.
- Emergency response and notification.
- General facility safety rules.

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

Design Engineering provides a broad base of design services in support of Department of Energy Operations at the Nevada Test Site and at off-site locations (e.g., RSL-A and RSL-N). The range of services provided includes the design and analysis of Structures, Systems and Components (SSCs) representing a multitude of facility types, systems, and associated supporting infrastructure. Depending upon project requirements, functional support may be provided within one or more of the following technical disciplines: Civil, Architectural, Structural, Mechanical, Fire Protection, Electrical, Communications and Electronics.

The basic goal of the design process is to produce a design of high quality which meets the requirements, including required and appropriate codes and standards, in a cost-effective and timely manner. The primary characteristics of the design process which achieves this goal include the following:

- Clear understanding of the project or task objectives which includes definitive scope and design criteria.
- A specific plan for meeting the objectives with a design concept and execution plan.
- Early and specific definition and implementation of requirements and design baselines.
- Early documentation and approval of the design criteria, including codes and standards, before initiation of detailed design.
- Iterations that allow refinement of the design to optimize the results.
- Integration of pertinent constraints and predecessor design information, including application of codes, standards, and criteria used successfully for past design activities.
- Identification of design process logic and tasks requiring completion prior to proceeding to the next steps in the process.
- Progressive validation and acceptance of the design through various feedback and performance assessment activities.
- Documentation of intermediate results to establish and maintain a clear and complete understanding of the design thereby adhering to the codes and standards throughout the design process and serving as a basis for configuration control.
- Engineering project and task teams with clear accountability for engineering execution, technical adequacy, and installed costs.
- Engineering staff with clear accountability for the technical adequacy, including codes and standards used for the design.

To control the engineering work, various activities are broken down into tasks and sub-tasks, and milestones are established. For example, external or off-project technical design reviews by the engineering staff are established as key milestones in that they are integral parts of the management process and are used to determine the technical adequacy of the design, including the applicable codes and standards being used, during the design development. Integrated design reviews can be conducted for project's SSCs at the completion of conceptual, preliminary, and detailed design. These reviews assure that design requirements are properly integrated, and the work of off-project efforts are included.

Specific to a project or task the project or lead engineer is responsible for managing the development of the design to assure the incorporation of established requirements which reflect both client needs and those imposed by

2. 7.1 *Design Engineering*

Latest Revision: 1/26/05

external agencies which again encompass required codes and standards. At the beginning of each project, task, or design effort, the project or lead engineer establishes the management control methods, interface control, and engineering group integration to ensure the above occurs.

The design process can be considered to have four major phases:

- Conceptual Design
- Preliminary Design (Title I)
- Detailed Design (Title II)
- Implementation (Title III including engineering support to construction)

However, the engineering scope may not always include all of these phases. If the project is initiated at the preliminary or detailed design phase, the project work plan should reflect the need to obtain and assimilate information from earlier phases performed by other organizations. The following is a brief description of each phase:

CONCEPTUAL DESIGN - The purpose of the conceptual design phase is two fold. The first objective is to define the firm requirements and identify options and solution with related costs. The requirements and their relative importance must be known. Clients and external agency requirements are identified and analyzed to ensure that the applicable design inputs and parameters have been considered in developing conceptual solutions.

This includes:

- Review of similar designs performed in the past
- Establishment of design criteria; system functional requirements site and environmental requirements equipment qualification requirements fire protection requirements codes and standards (further described and addressed below) quality / verification requirements regulatory / licensing requirements
 - * basic client needs and requirements
- Identification of affected and / or related design documents
- Reliability / availability, human factors, operations and maintenance requirements
- Identification of applicable construction, operations, and testing requirements

Section 2 - Hazards and Management Issues:

To control the engineering work, various activities are broken down into tasks and sub-tasks, and milestones are established. For example, external or off-project technical design reviews by the engineering staff are established as key milestones in that they are integral parts of the management process and are used to determine the technical adequacy of the design, including the applicable codes and standards being used, during the design development. Integrated design reviews can be conducted for project's SSCs at the completion of conceptual, preliminary, and detailed design. These reviews assure that design requirements are properly integrated, and the work of off-project efforts are included.

Specific to a project or task the project or lead engineer is responsible for managing the development of the design to assure the incorporation of established requirements which reflect both client needs and those imposed by external agencies which again encompass required codes and standards. At the beginning of each project, task, or design effort, the project or lead engineer establishes the management control methods, interface control, and engineering group integration to ensure the above occurs.

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This includes:

- Review of similar designs performed in the past
- Establishment of design criteria
 - * system functional requirements
 - * site and environmental requirements
- Equipment qualification requirements

Engineering provides a broad base of design services in support of Department of Energy Operations at the Nevada Test Site and at off-site locations for example, RSL-A, RSL-N). The range of services provided includes the design and analysis of Structures, Systems and Components (SSCs) representing a multitude of facility types, systems, and associated supporting infrastructure. Depending upon project requirements, functional support may be provided within one or more of the following technical disciplines: Civil, Architectural, Structural, Mechanical, Fire Protection, Electrical, Communications and Electronics.

The basic goal of the design process is to produce a design of high quality which meets the requirements, including required and appropriate codes and standards, in a cost-effective and timely manner. The primary characteristics of the design process which achieves this goal include the following:

- Clear understanding of the project or task objectives which includes definitive scope and design criteria.
- A specific plan for meeting the objectives with a design concept and execution plan.
- Early and specific definition and implementation of requirements and design baselines.
- Early documentation and approval of the design criteria, including codes and standards, before initiation of detailed design.
- Iterations that allow refinement of the design to optimize the results.
- Integration of pertinent constraints and predecessor design information, including application of codes, standards, and criteria used successfully for past design activities.

- Identification of design process logic and tasks requiring completion prior to proceeding to the next steps in the process.
- Progressive validation and acceptance of the design through various feedback and performance assessment activities.
- Documentation of intermediate results to establish and maintain a clear and complete understanding of the design thereby adhering to the codes and standards throughout the design process and serving as a basis for configuration control.
- Engineering project and task teams with clear accountability for engineering execution, technical adequacy, and installed costs.
- Engineering staff with clear accountability for the technical adequacy, including codes and standards used for the design.
 - * fire protection requirements
 - * codes and standards (further described and addressed below)
 - * quality / verification requirements
 - * regulatory / licensing requirements
 - * basic client needs and requirements
- Identification of affected and / or related design documents
- Reliability / availability, human factors, operations and maintenance requirements
- Identification of applicable construction, operations, and testing requirements

The outcome of the above objective should result in a requirements baseline that is mutually agreed-to by both the customer and Design Engineering. This serves as the basis for the initial Engineering Execution Plan for the next phase described below.

The second objective is to define and baseline the conceptual design. This may require several iterations to ensure that all requirements have been identified and potential solutions have been evaluated adequately. The contents of the conceptual design include:

- Functional objective of the design or statements of the task or problem
- Design Criteria established as discussed above, including applicable codes and standards to a level appropriate to the state of the design
- System design documentation and component interface identification
- Sketches or drawings of conceptual designs
- Schedule of major milestones
- Cost estimates (engineering, operating, total project)
- Analysis of alternative designs
- Identification of long-lead time procurement items
- Consequences of the concepts on success of tasks and items; such as other equipment quantities, facility size, risks, hazards (engineering will evaluate the hazards associated with a project's SSCs and select the appropriate design standards commensurate with those hazards while at the same time ensuring the appropriate level of quality and economy. This is further discussed later in this section.), etc.

It is also important that in a matrix organization the project engineer or lead engineer of a task or effort seek must seek technical review and input from the engineering functional technical disciplines comprising the engineering staff. After the completion of the staff reviews during this phase, the conceptual design is mutually agreed-to with the customer.

PRELIMINARY DESIGN - The preliminary design phase is the development, in more detail, of the design concept selected for each system and facility in the scope of the project. This involves the application of universally accepted formulas, equations, and other standard engineering practices in the design of SSCs. The engineering activities of this phase include: trade-off studies, refinement of cost estimates, detailed schedules supporting major milestones, materials testing and surveys, advanced procurement activities, etc.

These preliminary designs typically involve application of concurrent engineering techniques including coordination among all necessary engineering groups plus input from construction and startup personnel for compliance with design requirements, constructability, cost-effectiveness, and compatibility with schedule requirements.

Again following engineering staff reviews, which were mutually identified and agreed-to between staff and the project or task team, a meeting with the client may take place to ensure that the preliminary design is acceptable and approved. Following agreement, this forms the basis for the detailed design phase.

DETAILED DESIGN - The selected and documented preliminary design is developed into the detail design using the following:

- Walk-downs
- Design technical reviews
- Design calculations including finalization of applicable preliminary calculations performed
- Drawings
- Specifications
- Bill of materials / material requisition
- Vendor data
- Construction reviews of design
- Test procedures
- Construction / subcontract plan
- Turnover plan / beneficial occupancy

The control of the design process activities will assure that the developed detailed design still adheres to the requirements previously established in the preliminary design and validates the technical adequacy of the supporting engineering analysis. This process includes the accomplishment of design verification conducted by peer review, design review, alternate analysis, or qualification test.

Quality assurance, inherent to the engineering work process, is based upon performance compliant with established procedures covering the control of design input, design analysis and verification processes, design document preparation, and design change control. All records supporting audit of these processes are maintained by

2. 7.1 *Design Engineering*

Latest Revision: 1/26/05

engineering.

IMPLEMENTATION - The design is constructed with the support of Design Engineering through interpretation of design documents and resolution of implementation problems.

The SSCs are then tested and operated to verify that performance requirements have been met. Results from testing or operation which are not consistent with design requirements must be evaluated to determine the need for design changes. If a design change is needed, the change must be evaluated for possible adverse impacts on the original design and carried through each of the phases noted above. The design and engineering activities culminate with turnover of the systems and facilities and as-built drawings, as appropriate, to the client.

Section 3 - Standards:

Standard

Title

29 CFR 1910 Subpart L

Fire Protection

Note Added by BCR 2003-001.

Only to be used for design of fixed fire suppression, detection, and alarm systems installed to meet the fire protection requirements of 29 CFR, Part 1910.

DOE P 450.3

Closure Process for Necessary and Sufficient Sets of Standards

Note Authorizes use of the Necessary and Sufficient Process for standards-based ES&H management.

Nevada Administrative Code (NAC) 477

State Fire Marshall

Note Added by BCR 2003-001.

Applicable only to LV and NLV, Nevada facilities for facility design, fire protection, fire prevention, and life safety.

National Electrical Code (NEC)

Applicable Standards

Note The proper application of standards in conjunction with the engineering work process will result in an acceptable level of potential hazard mitigation as well as providing for the best value to the client. A comprehensive set of standards will be identified during the establishment of the project-specific Design Criteria Package, as those which are both necessary and sufficient to fully satisfy a particular project's requirements. This comprehensive set of standards will vary from project to project.

National Fire Protection Association
(NFPA) 70

National Electrical Code (NEC)

Note Note: Specified by DOE O 440.1A, CRD, paragraph 12.k. Added by BCR 2003-021

International Building Code (IBC)

Applicable Standards

2. 7.1 *Design Engineering*

Latest Revision: 1/26/05

Note *The proper application of standards in conjunction with the engineering work process will result in an acceptable level of potential hazard mitigation as well as providing for the best value to the client. A comprehensive set of standards will be identified during the establishment of the project-specific Design Criteria Package, as those which are both necessary and sufficient to fully satisfy a particular project's requirements. This comprehensive set of standards will vary from project to project. Changed by BCR 2004-049, 1/19/05.*

International Fire Code (IFC) *Applicable Standards*

Note *The proper application of standards in conjunction with the engineering work process will result in an acceptable level of potential hazard mitigation as well as providing for the best value to the client. A comprehensive set of standards will be identified during the establishment of the project-specific Design Criteria Package, as those which are both necessary and sufficient to fully satisfy a particular project's requirements. This comprehensive set of standards will vary from project to project. Updated by BCR 2004-049, 1/19/05.*

International Mechanical Code (IMC) *Applicable Standards*

Note *The proper application of standards in conjunction with the engineering work process will result in an acceptable level of potential hazard mitigation as well as providing for the best value to the client. A comprehensive set of standards will be identified during the establishment of the project-specific Design Criteria Package, as those which are both necessary and sufficient to fully satisfy a particular project's requirements. This comprehensive set of standards will vary from project to project. Updated by BCR 2004-049, 1/19/05.*

International Plumbing Code (IPC) *Applicable Standards*

Note *The proper application of standards in conjunction with the engineering work process will result in an acceptable level of potential hazard mitigation as well as providing for the best value to the client. A comprehensive set of standards will be identified during the establishment of the project-specific Design Criteria Package, as those which are both necessary and sufficient to fully satisfy a particular project's requirements. This comprehensive set of standards will vary from project to project. Updated by BCR 2004-049, 1/19/05.*

Section 4 - Measurement Parameters:

The parameter that provides the most immediate measurement of the overall effectiveness of the engineering work process is project design cost and schedule. When the engineering design effort is not encumbered by the application of unnecessary design standards and/or process requirements, some savings in both design costs and scheduled time of performance may be attained. These are metrics that can be easily measured within the current project controls environment.

Other high level measures of design process effectiveness include:

Total Installed Cost
Total Life Cycle Cost
Ratio of Engineering Cost to Total Installed Cost

Section 5 - Implementation Considerations:

This work activity, the scope of which includes having personnel occasionally visit the site, will also be governed by other applicable program requirements developed through other WBS elements, such as 29 CFR1910, 29CFR1926 or Mine Safety and Health Administration Standards. WBS 4.7, Quality Assurance, addresses

some of the applicable requirements to non-reactor nuclear facilities (i.e., pertaining to "activities or operations"), in accordance with 10CFR830.3 and 830.120.

Standards Identification - The identification of codes and standards in the design process described above results in providing the best value to the client. As briefly described in section 1.0, the selection of the proper codes and standards for a project is based on those particular requirements of that project thereby allowing the product to be much more cost effective. The design process also illustrates that this selection is based on numerous sources of expertise within Design Engineering to ensure that the selected codes and standards are both necessary and sufficient to fully satisfying the project's validated requirements and constraints. As described in the brief review of the design process in section 1.0, the following contribute to proper code and standard selection:

- engineers selected for that particular project or effort on the basis of their qualifications to do the work
- participation and accountability of senior engineers, lead engineers, and project engineers in the selection of the codes and standards
- thorough documentation of the selection process and decision basis
- peer checking and verification on the project or task to ensure correct and adequate selection
- technical design reviews by staff members
- effective use of prior designs
- use of codes and engineering standards that have been successfully used in the past
- client participation to capture code or standard preferences, if any.

The implementation of the requirements of general codes listed in Section 3.0 may subsequently bring into play, as determined by the design engineer, standards and guidelines of consensus/industry groups such as the following:

- The Asphalt Institute
- ASCE - American Society of Civil Engineers
- AWWA - American Water Works Association
- ANSI - American National Standards Institute
- NACE - National Association of Corrosion Engineers
- ASTM - American Society for Testing and Material
- API - American Petroleum Institute
- AASHTO - American Association of State Highway and Transportation Officials
- The Hydraulic Institute
- USACE - U.S. Army Corp of Engineers
- ACI - American Concrete Institute
- AISC - American Institute of Steel Construction
- AWS - American Welding Society
- MBMA - Metal Building Manufacturer's Association
- NCMA - National Concrete Masonry Association
- PCA - Portland Cement Association
- SDI - Steel Deck Institute
- SJI - Steel Joist Institute

- ASME - American Society of Mechanical Engineers
- NFPA - National Fire Protection Association
- ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers
- ACGIH - American Conference of Governmental Industrial Hygienists
- IEEE - Institute of Electrical and Electronic Engineers
- REA - Rural Electrification Administration
- IES - Illumination Engineering Society of America
- NEMA - National Electrical Manufacturer's Association
- LPI - Lightning Protection Institute
- NTIA - National Telecommunications and Information Administration
- EIA - Electronics Industries Association
- ITU - International Telecommunications Union
- TIA - Telecommunications Industries Association
- SMACNA, HVAC Systems - Duct Design - Sheet Metal and Air-Conditioning Contractors' National Association, HVAC Systems - Duct Design
- DOE-STD-1020-2002 - Natural Phenomena Hazards Design and Evaluation Criteria for Department of Energy Facilities
- DOE-STD-1021-93 - Natural Phenomena Hazards Performance Categorization Guidelines for Structures, Systems, and Components
- DOE-STD-1022-94 - Natural Phenomena Hazards Categorization Criteria
- DOE-STD-1023-95 - Natural Phenomena Assessment Criteria

Substantial time and cost savings could be realized from streamlining the design review process. Current requirements mandate a 15 working day external (DOE) review cycle, which can result in as much as one calendar month between the issue for review date and the conduct of the final review meeting. In addition, current procedures require design review and signature approvals from many different entities which may not have any involvement in, or are not affected by the particular design. A screening of the project during the preliminary design phase, to establish the specific organizational entities that will need to review and approve the final design, would expedite the design review process and reduce associated costs.

Section 6 - Work Environment:

The engineering work activity is performed in a technical office environment. There are occasions when the engineering work activity requires a site or field investigation. However, this represents a small percentage of the overall work process.

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

"Drafting is the language of engineering. Drafting communicates the intent of the design to the constructor." -
Author Unknown

Drafting provides the graphical representation of design requirements and existing physical conditions for all engineered buildings, structures, parts, components, and systems for conventional as well as non-reactor nuclear facilities. Drafting also provides instructional drawings including shop details, assembly procedures, machinery placement, crane positioning and rigging, and general logistics type planning documents. Drafting activities do not, by definition, include design activities. However, drafting activities as performed by senior draftsman, designers, and engineers do, by their nature, encompass and provide design engineering control. Design engineering control is further elaborated through a checking process which confirms geometry, general language and spelling, adherence to drafting standards, and reproduction feasibility. Drawings may be interpreted as legal documents communicating the intent of the design.

Drafting work is controlled by the following:

Criteria: Drafting accepts and interprets a design or project criteria provided by Design Engineering to develop a consistent depiction of SSCs and SSC requirements into a physical design. Transformation of the criteria is accomplished through consultation with engineering, project engineering, the client, or other responsible parties involved with the final product.

Standards: Drafting follows standards for drawing creation that ensure the final drawing can be understood by the intended users.

Client: Drafting provides modified and customized graphic deliverables depending on client need.

Section 2 - Hazards and Management Issues:

Hazards associated with this work include those commonly encountered in an office environment as well as during field trips to construction sites to gather data.

Management support and direction to enforce a CAD/CAE standard, including implementation of a uniform training program, selection of a standard CAD/CAE file format, and development of a CADrafting Manual, are important for realization of full matrix capability. Lack of full matrix capability disallows gains that could be made to achieve a level work force and provide improved and more responsive customer support on projects. Additionally, advanced system enhancement is made more difficult when resources are diluted in support of multiple CAD/CAE systems.

Section 3 - Standards:

Standard	Title
42 USC 12111, et seq.	Americans with Disabilities Act (ADA)

2. 7.2 Drafting

Latest Revision: 9/30/96

Note When a standard selected by Engineering imposes specific drafting requirements, the Drafting (CAD/CAE) work activity will supplement its typical implementation standards with the additional requirements.

American National Standards Institute
(ANSI) IAWS A2.4

Standard Symbols for Welding, Brazing and Nondestructive Examination

Note When a standard selected by Engineering imposes specific drafting requirements, the Drafting (CAD/CAE) work activity will supplement its typical implementation standards with the additional requirements.

American National Standards Institute
(ANSI) IPC-A-600

Printed Wiring Bd. (fabrication)

Note When a standard selected by Engineering imposes specific drafting requirements, the Drafting (CAD/CAE) work activity will supplement its typical implementation standards with the additional requirements.

American National Standards Institute
(ANSI) IPC-D-275

Circuit Card Assemblies

Note When a standard selected by Engineering imposes specific drafting requirements, the Drafting (CAD/CAE) work activity will supplement its typical implementation standards with the additional requirements.

American National Standards Institute
(ANSI) Y1.1

Abbreviations for use on Drawings and in Text

Note When a standard selected by Engineering imposes specific drafting requirements, the Drafting (CAD/CAE) work activity will supplement its typical implementation standards with the additional requirements.

American National Standards Institute
(ANSI) Y14.1

Drawing Sheet Size and Format

Note When a standard selected by Engineering imposes specific drafting requirements, the Drafting (CAD/CAE) work activity will supplement its typical implementation standards with the additional requirements.

American National Standards Institute
(ANSI) Y14.15

General Electronic Diagrams

Note When a standard selected by Engineering imposes specific drafting requirements, the Drafting (CAD/CAE) work activity will supplement its typical implementation standards with the additional requirements.

American National Standards Institute
(ANSI) Y14.2

Surface Texture Symbols

Note When a standard selected by Engineering imposes specific drafting requirements, the Drafting (CAD/CAE) work activity will supplement its typical implementation standards with the additional requirements.

American National Standards Institute
(ANSI) Y14.5M

Dimensioning and Tolerancing

Note When a standard selected by Engineering imposes specific drafting requirements, the Drafting (CAD/CAE) work activity will supplement its typical implementation standards with the additional requirements.

American National Standards Institute
(ANSI) Y32.16

Reference Designators (schematics and PCB)

Note When a standard selected by Engineering imposes specific drafting requirements, the Drafting (CAD/CAE) work activity will supplement its typical implementation standards with the additional requirements.

American National Standards Institute
(ANSI) Y32.2 and Y32.14

Graphic Symbols (schematics)

2. 7.2 *Drafting*

Latest Revision: 9/30/96

Note When a standard selected by Engineering imposes specific drafting requirements, the Drafting (CAD/CAE) work activity will supplement its typical implementation standards with the additional requirements.

Bechtel Design Drawing Standards Applicable Standards

Note RSN Design Drawing Standards as adopted by Bechtel.

Bechtel Drafting Manual Applicable Standards

Note RSN Manual as adopted by Bechtel.

Section 4 - Measurement Parameters:

Quality, timeliness, and cost parameters are used to provide guidance for the measurement of drafting work.

Section 5 - Implementation Considerations:

Standard implementation is the core to the creation of uniform drafting work. The proper application of these standards in conjunction with the engineering work process will result in an acceptable level of potential hazard mitigation as well as providing for the best value to the client. A comprehensive set of engineering standards will be identified during the establishment of the Project Execution Plan, as necessary to comply with the particular project requirements.

This work activity, the scope of which includes having personnel occasionally visiting the NTS, will also be governed by other applicable program requirements developed through other WBS elements. WBS 4.7, Quality Assurance, addresses the requirements applicable to non-nuclear reactor facilities (i.e., pertaining to "activities or operations"), in accord with 10CFR 830.3 and 830.120.

The set of implementation standards identified within this document are currently being utilized in support of the CAD/CAE work process.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

This work activity involves the production of cost estimates and schedules for projects funded by DOE/NV. A project could be any type of work activity with defined starting and ending points and some well defined work process. Projects can range from construction of a building or system to environmental management programs or administrative functions. A project can be any type of activity which is managed for timeliness of completion and/or cost-effectiveness to the client. Estimates and schedules are used by managers of projects, project team members and clients to plan required actions, forecast resource requirements and gauge progress.

The actual work process involves development of a basic time line, then development of a more detailed schedule and the resource loading of the proper manpower, equipment and materials to finish the required tasks within the required time frame. Estimates are completed when the total units of man hours, equipment hours, and material quantities are known and multiplied by the proper cost factors for each cost category. The proper overhead charges, labor loads, administrative burdens, inflationary figures, etc., must then be added to the estimate to obtain the complete accurate cost projection for the project. Major projects or ones with some level of uncertainty have a contingency added, which is an assigned percentage of the total project cost.

There are no specific laws or industrial standards which govern the estimating or scheduling process. The process used must only meet the business standards of the contractor performing the estimate, as well as any special client requirements for format, accuracy and completeness.

In outside industry, many companies guard their methods of producing estimates for bidding purposes as proprietary information.

Section 2 - Hazards and Management Issues:

There could be physical hazards associated with office environments or field locations personnel are required to visit to obtain site specific information effecting cost or schedule. These hazards would be equivalent to those faced routinely in industry.

Schedules and estimates are the two basic tools contractor and client managers have to plan work activities. Accuracy and completeness of an estimate or schedule are the primary management considerations. Since change is inevitable, timeliness and ease of adjusting schedules and estimates are also of importance to management.

Section 3 - Standards:

Standard	Title
NONE	NONE
Note	<i>There are no regulatory or statutory methods for estimating and scheduling. It is expected that organizations conducting work for DOE/NV will develop, implement and maintain a system for estimating and scheduling work activities to permit prudent allocation of resources. Note changed by BCR 2004-010, 4/21/04</i>

Section 4 - Measurement Parameters:

Actual project performance should be recorded and compared to baseline estimates and schedules to gauge how accurately projects are being forecasted. Costs should be estimated within predetermined limits of accuracy established with the client. Schedules should have no major omissions or unforeseen dependencies. Project files should be maintained in an orderly manner.

Section 5 - Implementation Considerations:

This work activity, the scope of which includes having personnel occasionally visit the site, will also be governed by other applicable program requirements developed through other WBS elements, such as 29 CFR1910, 29CFR1926 or Mine Safety and Health Administration Standards. WBS 4.7, Quality Assurance, addresses some of the applicable requirements to non-reactor nuclear facilities (i.e., pertaining to "activities or operations"), in accordance with 10CFR830.3 and 830.120.

Adoption of the contractual standard began with the transition to the combined NTS M&O contract. See the BNC Manual, "Planning and Controls Department Project Controls Procedures, PCP-M1," 2/20/96. Sections PCP-1.6 and PCP-1.8 contain procedures for the estimating and scheduling of projects.

Effective estimating and scheduling also play important roles in the utilization and maintenance of physical assets.

(It should be noted that estimating and scheduling are distinct from budgeting and accounting activities and are not governed by the standards identified in the associated WBS documentation.)

Section 6 - Work Environment:

The work of estimating and scheduling is usually conducted in an office environment using office materials and equipment, including personal computers and printers. Personnel involved in estimates and schedules may often times visit a job site to obtain first-hand information and be exposed to the field conditions present.

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

There is training offered for each type of computer software used in these work activities such as; PRIMAVERA, MICROFRAME and various spread sheet type programs.

Section 9 - Vulnerabilities:

It is possible that cost overruns and/or missed milestones on projects could lead to the loss of business opportunities, the loss of return customers to the contractor and the loss of DOE institutional credibility.

Section 1 - Work Activity:

This work activity includes visual and quality control inspection services provided in support of construction, operations and maintenance activities. Inspections are conducted per design documents, technical data, manufacturers recommendations/specifications and various code requirements. Inspections are executed to verify and document conformance or nonconformance of covered products, processes and materials, and to verify the quality of the installed products.

Execution of this work activity requires the interface with and application of other Work Smart Standards work activities and the standards cited therein. Below are the typical WSS work activities for which interfacing is expected. Others will be addressed as needed:

- 1.5.1 - Records Management & Document Control
- 2.4 - Underground Operations
- 2.7.1 - Design Engineering
- 2.12 - Hazard Assessment
- 2.8 - Construction
- 2.15 - Hazard Category 2 & 3 Non-reactor Nuclear Facilities
- 3.4 - Facility Maintenance
- 3.10.1 - Materials Testing
- 4.1.2 - Fire Protection: Fire Prevention Activities
- 4.2.1 - Occupational Safety & Health Programs: for all safety and health standards
- 4.2.2 - Industrial Hygiene
- 4.4 - Radiation Protection: for all radiation protection standards
- 4.7 - Quality Program: for all nuclear & non-nuclear quality assurance requirements
- B3 List - Device Assembly Facility

Section 2 - Hazards and Management Issues:

Inspections can be performed in any operations, maintenance or construction environment. The hazards will be the same as those existing in these environments at the time of the inspections. Hazards are mitigated and risks are managed through application of the contractors/NTS users Integrated Safety Management System to include appropriate safety training.

Poor quality materials or workmanship can lead to safety issues or have negative operational impacts.

Section 3 - Standards:

Standard	Title
29 CFR 1926	Safety and Health Regulations for Construction
Note	<i>The general occupational hazards are minimized by an environmental protection and radiation protection program and by careful oversight by front line supervision and management. OSHA Safety and Health Standards for the Construction Industry, 29 CFR Part 1926, is the standard used in outside industry and is most applicable to general construction work at the NTS.</i>

None

Note *The standards to which a Visual and Quality Control Inspection will be performed are established on a case-by-case basis and will often time be based on project-specific design specifications, a Quality Inspection Plan, and technical data, and manufactures recommendations/specifications associated with an operations or maintenance activity. See Section 5, Implementation Considerations for the types of standards to which conformance may be verified.*

Section 4 - Measurement Parameters:

Common measurement parameters are:

- the number of inspections conducted,
- the number of deficiencies detected,
- the amount of rework performed, and
- the number of programmatic improvements that are made as a result of analyzing the information generated from inspections.

Section 5 - Implementation Considerations:

The standards to which a Visual and Quality Control Inspection will be performed are established on a case-by-case basis and will often time be based on project-specific design specifications, a Quality Inspection Plan, and technical data, and manufacturers recommendations/specifications associated with an operations or maintenance activity.

The following consensus standards are examples of standards, which may be specified by a project, to which an inspector will verify conformance to:

American National Standards Institute (ANSI);
American Society of Mechanical Engineers (ASME);
Institute of Electrical and Electronic Engineers (IEEE);
Instrument Society of America (ISA);
American Concrete Institute (ACI);
American Welding Society (AWS);
American Society for Testing and Materials (ASTM);
American Assoc. of State Highway Traffic Officials (AASHTO);
American Water Works Association (AWWA);
State of Nevada Department of Transportation (NDOT);
Federal Specifications (FS);
Concrete Reinforcing Steel Institute (CRSI);
Steel Structures Painting Council (SSPC);
American Institute of Steel Construction (AISC);
National Electrical Code(NEC); and
Uniform Building Code (UBC);
International Building Code.

An effective quality control inspection program will minimize rework.

Section 6 - Work Environment:

Inspection activities are conducted in all types of environments and locations exposing inspection personnel to typical construction, operational, and maintenance hazards and risks.

Section 7 - Uncertainties or Issues:

Acceptance criteria and/or performance standards must be clearly identified or defined and documented to assure the appropriate level of quality.

Section 8 - Training:

N/A - No special or unique indoctrination, training, and/or certification is necessary for performance of this work activity.

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

Survey Services provides surveying support to construction, network control, and engineering design. Although survey services are provided primarily in the state of Nevada, more specifically on the Nevada Test Site, some work could be done at other locations out of state. If that occurs, appropriate national and state regulations would be applied to perform the work.

Support to construction consists of the layout of stakes, located both horizontally and vertically, that construction personnel utilize to position structures or earthwork; periodic checking of projects to ensure compliance with design criteria specified on approved drawings; and providing final "as-built" configurations incorporating any changes or field modifications in project design. This support is also provided for tunnel construction.

Survey support to the Environmental Restoration and Waste Management (ERWM) projects is defined by relevant criteria that is site specific. This includes topographic surveys or location surveys in areas of environmental concern. These areas of concern may contain radioactivity, hazardous waste, or industrial waste.

Network control is the surveying of existing control monuments or establishing new monuments that are tied to the National Geodetic Survey (NGS) National Geodetic Control Network. The existing monuments are located, for the most part, on remote mountain tops throughout the Nevada Test Site.

Engineering design utilizes survey to provide the existing topographic and planimetric features to be used as a background for a design drawing. This information is transmitted to design via electronic means. Survey Services is called upon to check design drawings prior to them being issued for construction.

Survey Services also provides Users with data pertaining to drill hole locations, geodetic positions, volume determinations, and other pertinent survey information.

Section 2 - Hazards and Management Issues:

The major hazard associated with the survey work is in the area of support to ERWM. The radiological and hazardous waste contaminants require that surveys be performed in various degrees of anti-contamination apparel depending on the level of contamination. Other hazards are typical of those Environmental, Safety, and Health hazards encountered at standard construction site operations. An exception to these hazards may be those encountered in hiking or driving to remote sites.

A management issue that needs to be addressed is the accuracy of surveying performed at the test site. The accuracy should either be performed to a general standard or specific requirements identified by the project design documents.

Section 3 - Standards:

Standard	Title
54 FR 25318, Issue 113, 6/14/89	Section 5.0 North American Datum Affirmation of 1983 (NAD 83)

2. 7.5 Surveying

Latest Revision: 9/30/96

Note

Federal Geodetic Control Committee, 1984 Standards and Specifications for Geodetic Control Networks

Note *The specific standard that is used from this publication addresses the accuracy of surveys performed. This standard is addressed as a distance accuracy:*

$1:a$

$a = d/s;$

d = distance accuracy denominator

s = propagated standard deviation of distance between survey points obtained from a least squares adjustment.

Nevada Revised Statutes (NRS) 278 Planning and Zoning

Note *Required for work off the NTS in Nevada. Analogous statutes for other states will be used as applicable for projects or sites outside of Nevada.*

Nevada Revised Statutes (NRS) 327 Nevada Coordination System

Note *Required for work off the NTS in Nevada. Analogous statutes for other states will be used as applicable for projects or sites outside of Nevada.*

Nevada Revised Statutes (NRS) 329 Perpetuation of Corners

Note *Required for work off the NTS in Nevada. Analogous statutes for other states will be used as applicable for projects or sites outside of Nevada.*

Nevada Revised Statutes (NRS) 625 Professional Engineers and Surveyors Manual of Instructions for the Survey of Public Lands of the United States

Note *It is intended that NRS 625 will be the standard for surveying work in Nevada for on or off the NTS. Analogous statutes for other states will be used as applicable for projects or sites outside of Nevada.*

Section 4 - Measurement Parameters:

This activity is a service based function that operates to satisfy the needs of different clients on a daily basis. The meaningful measurement parameter would be the opinion of these clients on how well this service was provided. Was the job done in a timely manner? Was the job done for the cost that was estimated? Was the job done accurately?

Section 5 - Implementation Considerations:

This work activity, the scope of which includes having personnel occasionally visit the site, will also be governed by other applicable program requirements developed through other WBS elements, such as 29 CFR1910, 29CFR1926 or Mine Safety and Health Administration Standards. WBS 4.7, Quality Assurance, addresses some of the applicable requirements to non-reactor nuclear facilities (i.e., pertaining to "activities or operations"), in accordance with 10CFR830.3 and 830.120.

Immediate implementation of these standards is possible, with the exception of the Federal Register Vol. 54, No. 113. The Register states "The National Geodetic Survey (NGS) has completed the redefinition and readjustment of the North American Datum of 1927 (NAD 27), creating the North American Datum of 1983 (NAD 83). The interagency Federal Geodetic Control Committee (FGCC) affirmed NAD 83 is the official civilian horizontal datum for surveying and mapping activities performed or financed by the Federal Government. Furthermore, to the extent

2. 7.5 *Surveying*

Latest Revision: 9/30/96

practicable, legally allowable, and feasible, all Federal agencies using or producing coordinate information should provide for an orderly transition from NAD 27 to NAD 83." At the NTS all data has been historically provided in NAD 27 coordinates in feet. The exception to this is information for the purpose of environmental permitting with the state. Nevada Revised Statutes require reporting in NAD 83, with the coordinate values in meters.

The Survey Services group has begun resurveying the existing NTS control for the adoption of NAD 83. This adoption will have to be accomplished with the support of DOE/NV. Since the coordinate values are part of the metrication process.

DOE Order 6430.1a, Division 2, Section 0202 - Surveying, is a duplication of other standards used. Not only is it a duplication but it also imposes additional requirements that add to the cost of surveying at the NTS, but not to the quality of the product. An example is the section on temporary control. By the DOE Order the requirements for temporary control are as stringent as for permanent control, i.e., monuments to be used and guard posts to protect them. By the implementation of the standards in Section 3, the additional and duplicated requirements as mandated by DOE Orders will be eliminated, providing for a more cost effective means of providing survey services.

Consideration should be given to developing a remote / desert / mountain safety program for work activities conducted in these unusual environments.

Section 6 - Work Environment:

Work in remote desert and mountain locations is common.

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

This work activity covers both new construction and modification activities as defined below. Maintenance and repair of existing facilities is addressed in WBS 3.4, Facility Maintenance.

Special requirements for Hazard Category 2 & 3 Non-reactor Nuclear Facilities are specified in the 2.X format-1; and for the DAF are specified in the B3 List and will be specified by the design team and or the project team.

The actual construction will be in accordance with an approved design. A design may be established through Design Engineering (see 2.7.1) or by a project team who will also apply the standards specified in the 2.7.1-Design Engineering Work Smart Standards.

Field changes will be subject to project quality assurance, records management and document control, and configuration control requirements.

Site Work

Site work pertains to all construction related ground preparation activities for buildings, as well as for other infrastructure elements (roads, water systems, sewer systems, power systems, etc.). Site work also includes excavation for environmental restoration work. Site work includes clearing, grubbing, watering, cut and fill, rough grading, finish grading, compaction, trenching, excavation, and demolition of existing facilities and utilities. Most of this work is accomplished through the operation of heavy equipment such as dozers, rippers, scrapers, trenchers, rollers, back hoes, graders, loaders and trucks. Excavations are still done by hand when necessary by laborers using pick and shovel or various pneumatic tools. If rock or other special conditions are encountered during site work, drilling and blasting may also be employed. Demolition of existing facilities and utilities may require the use of explosives.

Structural

Structural work activities pertain to all building construction activities and methods as well as to other adjoining appurtenances and utilities. These work activities cover the entire scope of building work from measuring, staking, form setting, concrete pouring, pumping and finishing, framing, erection, siding, covering, sheathing, and roofing, through caulking, finishing, testing, plastering, painting, and cleaning for final use.

Mechanical

Mechanical work activities pertain to the construction, assembly, and installation of the physical plant portion of buildings and systems. This may include air systems, boilers, condensate and feed system, fire suppression systems, water treatment systems, compressed gas systems, diesel engines and support systems. Work activities include pipe fitting, welding, placing, leveling, aligning and anchoring equipment and charging refrigerant systems.

Electrical

Electrical work pertains to activities required to build, install and construct all components of a building or system which are electrical in nature. The components could be transformers, power feeds, power distribution systems, wiring, alarms, controls or communications systems as well as the supports for these components. The work methods comprise placing, bending and installing conduit, pulling and running wire, as well as splicing, welding,

soldering, crimping, terminating.

Execution of this work activity requires the interface with and application of other Work Smart Standards work activities and the standards cited therein. Below are the typical WSS work activities for which interfacing is expected. Others will be addressed as needed:

- 1.1.7 - Labor Relations
- 1.3.1 - Procurement
- 1.5.1 - Records Management & Document Control
- 2.4 - Underground Operations
- 2.7.1 - Design Engineering
- 2.7.3 - Estimating
- 2.7.4 - Visual Inspection and Quality Control Inspection
- 2.12 - Hazard Assessment
- 3.4 - Facility Maintenance
- 3.6 - Transportation
- 3.10.1 - Materials Testing
- 3.12 - Explosives Storage
- 4.1.2 - Fire Protection: Fire Prevention Activities
- 4.2.1 - Occupational Safety & Health Programs: for all safety and health standards
- 4.2.2 - Industrial Hygiene
- 4.4 - Radiation Protection: for all radiation protection standards
- 4.5 - Environmental Protection Program: for all environment standards
- 4.7 - Quality Program: for all nuclear & non-nuclear quality assurance requirements
- B2 List:
 - Energetic Experiments with Special Nuclear Materials (SNM)
 - National Emergency Response Assets
- B3 List:
 - Devise Assembly Facility

Section 2 - Hazards and Management Issues:

General occupational hazards to workers present during all the above activities are normal for this segment of the general construction industry. Construction hazards are numerous and may include the following abbreviated list for example:

- injuries from slips, trips and falls
- injuries from falling objects or material
- hearing loss from excessive loud noises
- skin punctures from tools, sharp edges, slivers
- injuries from the unplanned release of stored energy
- eye injuries from blown or deflected materials
- electrical shocks
- equipment rollovers and other accidents
- trench cave-ins and slope failures
- skin injuries from chemical contact

2. 8 Construction

Latest Revision: 8/18/03

- respiratory ailments from airborne dust or chemicals
- exposure to various forms of radiation
- flash burns to the eyes or skin

Environmental degradation can be caused by site development work during construction. Damage to antiquities, endangered or threatened species of plants or animals, disturbance of wetlands or flood plains and related air and water pollution are some of the possible environmental hazards.

Important financial hazards and liabilities could be caused by poor quality, or out of specification products or workmanship. Guarding against the harmful results of poor quality, sub-standard or faulty construction is a primary management concern. By following the standards identified, management is assured that work products will be on par with nationally accepted criteria.

Section 3 - Standards:

Standard	Title
29 CFR 1926	Safety and Health Regulations for Construction
<i>Note</i>	<i>Specified by DOE O 440.1A, CRD, paragraph 12.e. Standard added by BCR 2003-010. Note added by BCR 2003-021.</i>
29 CFR 1910 Subpart L	Fire Protection
<i>Note</i>	<i>Added by BCR 2003-001.</i>
	<i>To be used for construction of fixed fire suppression, fire detection, and fire or employee alarm systems installed to meet the fire protection requirements of 29 CFR, Part 1910, apply.</i>
29 CFR 1910.109	Explosives And Blasting Agents For General Work
<i>Note</i>	<i>Added by BCR 2002-022.</i>
29 CFR 1926	Safety and Health Regulations for Construction
<i>Note</i>	<i>Added by BCR 2003-021.</i>
29 CFR 1926	Safety and Health Regulations for Construction
<i>Note</i>	<i>Added by BCR 2003-021.</i>
29 CFR 1926	Safety and Health Regulations for Construction
<i>Note</i>	<i>Added by BCR 2003-021.</i>
29 CFR 1926	Safety and Health Regulations for Construction
<i>Note</i>	<i>Added by BCR 2003-021.</i>
29 CFR 1926, Subpart T	Safety and Health Regulations for Construction, Subpart T- Demolition
<i>Note</i>	<i>Added by BCR 2002-022.</i>

2. 8 Construction

Latest Revision: 8/18/03

29 CFR 1926, Subpart U

Safety and Health Regulations for Construction, Subpart U - Blasting and the Use of Explosives

Note Added by BCR 2002-022.

National Electrical Code (NEC)

Applicable Standards

Note The National Electric Code (NEC) is the normal standard applicable for construction of electrical utilization systems in the United States. The NEC is referenced in state and local building codes for all systems except those of 600 volts or higher. NFPA 70, National Electrical Code, is specified in DOE O 440.1A, CRD, paragraph 12.k. Note revised by BCR 2003-021.

Nevada Department of Transportation
(NDOT)

As specified in the note

Note The local State highway specifications are the usual standards for grading, drainage, and paving, and many times contain specifications for water and sewer installations for work within the right-of-way. The Nevada Department of Transportation (NDOT) Standard Specifications For Road and Bridge Construction is a recommended standard. Specific standards will be specified in project/activity-specific design documents. Note revised by BCR 2003-010.

O 440.1A, CRD, Paragraph 14

Worker Protection Management for DOE, Federal, and Contractor
Employees: Construction Safety

Note Note: General: Applicability - construction projects above the monetary threshold established by the Davis-Bacon Act (40 U.S.C. 276a).

All parts of paragraph 14 are applicable with the following deviations:
Paragraph 14a(3) - A designated representative is not required to be on site at all times. Instead, a representative assigned to the project who is appropriately trained, commensurate with the risk of the project shall be available at all times. In addition, the designated representative is not required to conduct and document daily inspections. Instead, the assigned representative shall conduct and document inspections of the workplace, frequency based on risk, to identify and correct hazards and instances of noncompliance with project safety and health requirements.

Paragraph 14a(4) The requirement for a written on-site project safety and health plan shall be met by a contractor's approved planning documents prepared to meet the contract clause regarding safety management, e.g., 970.5204-2, Integration of Environment, Safety and Health into the Work Planning and Execution (June 1997).

Added by BCR 2003-021.

29 CFR 1926

Safety and Health Regulations for Construction

Note Added by BCR 2003-021.

29 CFR 1926

Safety and Health Regulations for Construction

Note Added by BCR 2003-021.

29 CFR 1926

Safety and Health Regulations for Construction

Note Added by BCR 2003-021.

29 CFR 1926

Safety and Health Regulations for Construction

Note Added by BCR 2003-021.

2. 8 *Construction*

Latest Revision: 8/18/03

29 CFR 1926

Safety and Health Regulations for Construction

Note Added by BCR 2003-021.

29 CFR 1926

Safety and Health Regulations for Construction

Note Added by BCR 2003-021.

Section 4 - Measurement Parameters:

The most practical and meaningful measurement parameter that can be used is the unit cost of the completed construction (cost per ton, lineal foot, square foot, etc.).

Section 5 - Implementation Considerations:

Construction will be per design. Any issues constructing to design will be resolved with the design team and design revised as appropriate. Various design standards, such as the UBC, NEC, NFPA, and the NTS Construction Specification are considered during design, and if called out in the design, will be applied during construction.

Section 6 - Work Environment:

Work environments are typical of equivalent sectors of the general construction industry. However, construction at the NTS can be unique at times due to the extremes of the desert environment, the remoteness of some sites and the possible presence of radiation fields.

Section 7 - Uncertainties or Issues:

None.

Section 8 - Training:

The construction trades and crafts are expected to understand the use and application of the general industry standards regarding construction and construction safety. This level of understanding and proficiency is consistent with the level of competency associated with trades and crafts covered by collective bargaining agreements, e.g., "skill-of-the craft." Site- process-, and company-specific training of construction personnel is established and completed on a case-by-case basis.

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

This work activity covers the supply of concrete, grout and other cement-related materials for NTS activities from three (3) NTS batching facilities that are similar to commercial batching facilities. This work activity consists of the following activities:

- Receipt and storage of raw materials
- Blending and mixing of cement and other materials (e.g., aggregate, water)
- Loading of cement-related products into trucks for transport
- Transport of products to job site

Supply of materials in support of construction includes the various concrete and grout mixtures that are designed to meet client/customer specifications. The mixture of cement, concrete and grout products are designed to achieve many different client needs. This can include mixtures that structurally support, insulate, contain, or protect structures that are located at NTS.

For cement and grout materials, the supplied products can be "dry product" or mixed as a wet product and delivered to the various construction sites. Concrete products are only delivered as a "wet product."

The cementing facilities supply grouting and stemming materials in support of ERWM drilling operations. The "dry product grout" is supplied to the drill site where it is site mixed for down hole grouting.

These facilities also provide construction support for other NNSA site contractors and subcontractors in the form of :

- Blending cementing products
- Mixing and supply of concrete products
- Bagging and supply of blended cement products

Standards applicable to transportation of concrete and cement products will conform to standards established in the Transportation WBS element, 3.6.

Testing of cement mixtures to verify conformance to design or customer specifications is conducted as a separate work activity (3.10.1 - Materials Testing) and is performed in accordance with customer specified standards or those WSS called out for the WSS work activity for 3.10.1 - Materials Testing.

Execution of this work activity requires the interface with and application of other Work Smart Standards work activities and the standards cited therein. Below are the typical WSS work activities for which interfacing is expected. Others will be addressed as needed:

1.1.7 - Labor Relations

1.3.1 - Procurement

1.5.1 - Records Management & Document Control

2. 9 *Cement and Concrete Products*

Latest Revision: 7/23/03

- 2.7.1 - Design Engineering
- 2.7.3 - Estimating
- 2.7.4 - Visual Inspection and Quality Control Inspection
- 2.12 - Hazard Assessment
- 3.4 - Facility Maintenance
- 3.6 - Transportation
- 3.10.1 - Materials Testing
- 4.1.2 - Fire Protection: Fire Prevention Activities
- 4.2.1 - Occupational Safety & Health Programs: for all safety standards
- 4.2.2 - Industrial Hygiene: for all health standards
- 4.5 - Environmental Protection Program: for all environment standards
- 4.7 - Quality Program: for all nuclear & non-nuclear quality assurance requirements

Section 2 - Hazards and Management Issues:

HAZARDS

Worker protection: Cement and cement-related products require workers to protect the skin from prolonged contact. In areas where cement dust is present, ventilation, a NIOSH approved respirator, and tight fitting goggles are recommended. The appropriate worker protection standards are selected from WSS WBSes 4.2.1 - Occupational Safety and Health Program and 4.2.2 - Industrial Hygiene.

Operation of the batch plants and related facilities and transportation of the cement-related products involves number of potential hazards common to construction-type work involving machinery, vehicular safety, noise, and other hazards. The appropriate worker protection standards are selected from WSS WBSes 4.2.1 - Occupational Safety and Health Program and 4.2.2 - Industrial Hygiene.

Environmental: fugitive dust emissions from the batch plant are a potential environmental hazard and are regulated by the NDEP. The applicable environmental protection standards are selected from those listed under WSS WBS 4.5 - Environmental Protection Program.

MANAGEMENT ISSUES/RISKS

A primary management concern is to ensure the quality of the products as needed to support NTS site construction, environmental and scientific activities. Quality is assured through the application of the appropriate standard from WSS WBS 4.7 - Quality Program, which may be specified in a company's Quality Assurance Program Plan or its procedures.

Section 3 - Standards:

The necessary and sufficient set of standards for production of cement-related products are performance-based standards that are established on a project-specific (or even batch-specific) basis. The actual standards for production of concrete and other cement-related products are variable and selected by Design Engineering and customers. The project establishes performance and/or design standards for a needed product and identifies these requirements in a technical specification provided to the batch plant. The plant then designs the mixtures to meet the performance goals or standards in the specifications. This practice is consistent with the approach used in commercial industry.

2. 9 *Cement and Concrete Products*

Latest Revision: 7/23/03

The majority of the test methods used to assure that NTS cement/concrete products meet job-specific requirements are ASTM test methods commonly used in commercial practice (e.g., ASTM C-150 for cement products, ASTM C-94 for concrete products). The specific test methods for a given project are typically identified by Design Engineering and customers.

Standard

Title

29 CFR 1926

Safety and Health Regulations for Construction

***Note** The "General Duty Clause", 29 CFR 1910 for general industry operations and 29 CFR 1926 for construction activities if properly applied will mitigate the employee hazards associated with this activity.*

Customer Specified

Note

Section 4 - Measurement Parameters:

In the cement and concrete industry, items typically monitored as performance measures are broken down as follows:

- a) Cost of raw materials vs. cement product cost/quality for resale.
- b) Operation costs calculated against the volume of product produced.
- c) Customer satisfaction measured by repeat business
- d) Industry quality standards for production of cement related products

At NTS, much of the work involves the blending of specialty cements for grouts that are not used in the general construction industry. Due to the large amount of science-based work that is supported, measurement parameters for the cement and concrete operations cannot be changed to industry standards without full consent of the customers and without additional support to ensure that the performance or other parameters will not be affected by any change in the final products.

Due to the unique needs of the cementing facility clients , the product quality as measured against the client's design specifications is the only recognized measurement parameter in use at the NTS cementing facilities.

Section 5 - Implementation Considerations:

Air emissions from the facilities are controlled via a permit from NDEP (Permit No. AP9711-0549). This permit is issued in accordance with State regulations , specifically NAC 4458.293, Operating Permits. The permit identifies emission units and mitigation measures necessary to control emissions (e.g., baghouses, coverings, water sprays). As a minimum, the produced products are measured for quality using the customer's product design parameters. These design parameters are recorded and as the products are produced, they are tested and gauged against these parameters. The value to customers is how well the products can perform when compared to the design parameters

The cementing facilities have been providing support services for a wide range of user groups. The facility has been modified/expanded several times through a gradual evolution into its existing configuration. At the present time, the capabilities of this facility are underutilized. There are no alternative facilities in the NTS area that can provide this

2. 9 ***Cement and Concrete Products***

Latest Revision: 7/23/03

service.

Section 6 - Work Environment:

No special conditions were identified

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

This work activity addresses the unique DOE needs and requirements for the determination, categorization, investigation, reporting, corrective action, lessons learned and related documentation due to events specified in Section 3 directives which have potential safety, environmental, health, or operational significance. These events, called reportable occurrences, require Site Office notification to DOE Headquarters within specified times with content prescribed in the directives cited in Section 3. The requisite information is input into a DOE-wide computer database called the Occurrence Reporting Processing System (ORPS) to be shared throughout the DOE complex.

Contractor roles and responsibilities and interfaces are also delineated in the directives cited in Section 3.

This work activity is not intended to replace, supplant or duplicate reporting required under federal, state, or local laws and regulations, it is in addition to these legal requirements.

Section 2 - Hazards and Management Issues:

This work activity is essentially an administrative / management function with some field investigation. The hazards associated with the administrative part of this activity are typical of an office environment. Hazards associated with the field investigations are broad and divers and are mitigated through application of the ES&H standards specified elsewhere within the NSO WSS and the organization's ISMS.

A process of identifying, correcting, and analyzing potential areas for recurrence of reportable events is needed so that management is able to institute the proper mechanisms for ensuring that corrective or preventive measures are taken. These events have the potential for negative publicity or poor public relations. Therefore, some type of management reporting system is regarded as critical for the success of DOE and contractors.

Section 3 - Standards:

There are no federal, state, or local laws or regulations or national consensus standards, which fulfill the requirements of the DOE Occurrence Reporting policy. Therefore, the directives cited below are considered necessary and sufficient for this work activity.

Standard	Title
DOE G 231.1-1	Occurrence Reporting and Performance Analysis Guide
Note	<i>Only the parts of this guide specified as required by DOE M 231.1-2, CRD are mandatory. All other parts are non-mandatory guidance. Added by BCR 2003-029.</i>
DOE G 231.1-2	Occurrence Reporting Causal Analysis Guide
Note	<i>Only the parts of this guide specified as required by DOE M 231.1-2, CRD are mandatory. All other parts are non-mandatory guidance. Added by BCR 2003-029.</i>
DOE M 231.1-2, CRD	Occurrence Reporting and Processing of Operations Information
Note	<i>This manual specifies parts of DOE G 231.1-1 and G 231.1-2 as required. Added by BCR 2003-029.</i>
DOE O 151.1B, CRD	Comprehensive Emergency Management System

2.10 Occurrence Reporting

Latest Revision: 11/30/04

Note BCR 2004-001 updated this from DOE O 151.1A. Only the parts related to the classification of Operational Emergencies are applicable to this work activity. Other parts of this directive are covered elsewhere in WSS.

NSO 231.X, CRD

Occurrence Reporting and Processing of Operations Information

Note Updated by BCR 2004-037, 10/20/04.

Section 4 - Measurement Parameters:

- Timeliness of reports submitted.
- Number of reports initiated vs. number of reports finalized.

Section 5 - Implementation Considerations:

The standards cited in section 3 will require procedure revisions, training updates, and retraining of key personnel.

Section 6 - Work Environment:

No unique work environments are associated with occurrence reporting. Field investigators may encounter any work environments identified under other work activities.

Section 7 - Uncertainties or Issues:

None.

Section 8 - Training:

Training requirements are identified in the cited directives.

Section 9 - Vulnerabilities:

None have been identified.

Section 1 - Work Activity:

The purpose of hazard assessment is to systematically review the structures, systems, components and operations of facilities and activities to ensure that these items are operated in a fashion that minimize the risks to the workers, general public and environment. To accomplish this assessment in a cost effective manner, the implementation should be in a graded manner considering the likelihood of an event in combination with the consequences of an event. In the case of nuclear facilities, the radiological consequences of operations and design basis events must be considered as well. Hazard assessments typically focus on the safety aspects of processes or unique activities. These assessments complement the routine activities conducted under the auspices of the Industrial Hygiene and Occupational Safety and Health programs, such as protection against trips, slips and falls, entry into confined spaces, use of respirators, control of exposure to industrial chemicals, control of exposure to noise or thermal stress. Representative work found in this activity includes assessment of chemical hazards routinely encountered in the workplace; assessment of physical hazards in the workplace (e.g. noise, and determination of method(s) of mitigation; and assessment of hazards associated with construction activities prior to start of construction and documentation of hazards as part of the construction Health and Safety Plan when requested. To be most effective, a hazard assessment should be initiated during the conceptual design phase for a facility or process or activity, and updated at appropriate points as additional information becomes available. The early initiation of the assessment permits the design to address identified hazards and engineer features to mitigate the hazards. As the design and implementation progresses it will become increasingly difficult and expensive to design mitigating features. The hazard assessment should rank hazards by risk to assist management in allocating its resources in the most effective manner possible.

Hazard assessments may be either qualitative or quantitative. Typical techniques for performing these assessments include:

- Safety review
- Checklist analysis
- Relative ranking
- Preliminary hazards analysis
- What-if analysis
- What-if/checklist analysis
- Hazard and operability analysis
- Failure modes and effects analysis
- Fault tree analysis
- Event tree analysis
- Cause-consequence analysis
- Human reliability analysis

It is up to the judgment of the assessment participant(s) to choose the technique most appropriate for the complexity of the process, magnitude of consequences and availability of information. There is no single format for documenting the hazard assessment, although several of the assessment techniques have typical tools. However, it is necessary that the documentation be sufficiently rigorous to demonstrate the adequacy of the assessment.

Aspects of hazard assessments include: for new, non-routine, or one-time-only jobs, assess hazards by performing

a Job Safety Analysis (JSA); perform hazard assessment for input to a management plan for any process involving the use of highly hazardous chemicals; perform preliminary hazards analysis in conjunction with the conceptual design phase of engineering projects and identify those hazards amenable to mitigation by engineering features; (nonnuclear hazards/items would be incorporated based on their identification by the applicable hazard assessment process). (A preliminary hazard analysis, based primarily on design or operational considerations, may be utilized as the basis for a preliminary radiological safety analysis document.)

The list of standards notwithstanding, NISCG concluded that the fundamental standard for this WBS is the conduct of a hazard assessment before beginning a new activity. This assessment should be cost effectively matched to the complexity, uncertainty, and overall risk of the activity. There are several guidelines that describe effective approaches to assure that real and contingent hazards associated with a process or a facility are addressed by an assessment of this type. The following are examples:

- AICHE Guidelines for Hazard Evaluation Procedures.
- NASA Safety Policy and Requirements Document.
- MIL-STD-882, System Safety Program Requirements.

Section 2 - Hazards and Management Issues:

Hazards to personnel performing hazard assessments:

- The hazards to which personnel performing hazard assessments are exposed are typical of those encountered in the office and at construction or industrial sites, and include the potential for exposure to hazardous chemicals and radioactivity/radiation.

Management issues:

- A management issue is involved when hazard assessment fails to identify a hazard that could result in a potentially hazardous situation that, if uncorrected, could lead to injury, civil and/or criminal liability, legal action and possible loss of external credibility for DOE and its contractors.
- Failure to perform the preliminary hazard assessment would serve to complicate and possibly result in delays in developing the material required to obtain authorization (i.e., for design, construction and/or start of operation) of the proposed facility/activity, or of any subsequent revisions deemed necessary.

Potential hazards identification and mitigation:

- Recognizing the hazards (both real and potential) associated with a facility/operation, and identifying mitigative features, when appropriate, will help provide management with assurance that its employees, the public and the environment will be protected. This includes identifying the presence of: hazardous chemicals and radioactivity, and the precautions requisite for their safe handling, use and storage; and physical hazards necessitating the need for worker protection, including from stored energy. In addition, the hazard analysis for engineering design projects may identify recommended design changes, mitigation options (engineered versus administrative controls) or changes to the proposed operational processes

Section 3 - Standards:

The following are the N&S standards for Hazard Assessment:

Standard**Title**

29 CFR 1910.119 (e)

Process Safety Management of Highly Hazardous Chemicals

Note Retained by BCR 2002-012.

40 CFR 68

Chemical Accident Prevention Provisions

Note Retained by BCR 2002-012. Required for hazard analysis of highly hazardous chemicals.

O 440.1A, CRD, paragraph 9.a.

Worker Protection Management for DOE, Federal, and Contractor Employees

Note Note: Paragraph 9.a, will be met through implementation of the contract clause regarding safety management, e.g., 970.5204-2, Integration of Environment, Safety and Health into the Work Planning and Execution (June 1997). Added by BCR 2003-021.**Section 4 - Measurement Parameters:**

The measurement parameters associated with hazard assessments for the workplace are those which relate to the thoroughness and effectiveness of the assessment, e.g.:

- Occurrences related to unidentified hazards are indicative of a weakness in the process, and
- Avoidance of occurrences related to identified hazards.

With respect to hazard assessments related to design engineering projects and as baseline information for preparation of the document describing customer satisfaction is measured by DOE approval of the document. The number of iterations due to ES&H issues in order to "get it right," is representative of the effectiveness of the process. The greater the number of iterations required for final approval, the less effective the process, since multiple iterations could impact project cost and schedule.

Section 5 - Implementation Considerations:

Use of the identified set of standards for assessment of non-nuclear related hazards in the workplace will require no significant change, so implementation could be immediate. However, the use of JSAs may also be advisable for jobs showing increased accident trending. Significant changes will be required for hazard assessments related to design engineering efforts in order to reflect the new standards. Substantive savings of time and money can be achieved by optimizing the preparation of hazard assessments for design engineering.

Early preparation of a preliminary hazard analysis can assist design engineers in identifying relevant ES&H issues and in avoiding related design changes.

There has been a recent trend, particularly for ERWM projects, to recognize the advantages to funding hazard assessments very early in the process. (DOE makes this decision.) This trend needs to continue and be applied to all significant projects.

It should be noted that the hazard assessment should be maintained current with the existing facility operations and as-built designs.

All standards identified for this process should flow down to subcontractors.

No exemptions from mandatory laws or regulations will be required.

Section 6 - Work Environment:

Work is normally performed in an office although input data may require job-site visits (laboratories, outdoors, etc.).

Section 7 - Uncertainties or Issues:***Section 8 - Training:******Section 9 - Vulnerabilities:***

Section 1 - Work Activity:

This work activity applies the to on-site transportation, storage, use, and disposal of military munitions associated with activities conducted under the purview of the National Nuclear Security Administration/Nevada Site Office (NNSA/NSO). This includes research and development (R&D) activities using explosives, which are conducted primarily at the Nevada Test Site (NTS). As defined in 40 CFR, Section 260.10, the term military munitions includes confined gaseous, liquid, and solid propellants; explosives; pyrotechnics; chemical and riot control agents; smokes; incendiaries; bulk explosives and chemical warfare agents; chemical munitions; rockets; guided and ballistic missiles; bombs; warheads; mortar rounds; artillery ammunition; small arms ammunition; grenades; mines; torpedoes; depth charges; cluster munitions and dispensers; demolition charges; devices and components; and DOE explosives with no Special Nuclear Material.

Military Munitions do not include wholly inert items improvised explosive devices, nuclear devices and nuclear components. Military munitions transportation under this work activity is defined as transportation of military munitions within the boundaries of a site of facility controlled by DOE/NV.

This work activity does not include the use; transportation, and storage of explosives when used in construction and mining applications or routine disposal of commercial explosives waste, when conducted on a permitted hazardous waste treatment facility. Refer to WBS, 2.1.8, Waste Explosives Disposal. Further, this work activity does not include transportation, storage, and use of military munitions by protective forces under the purview Nevada Operations. Protective force use of munitions is addressed in WBS, 4.6, Firearms Safety.

Section 2 - Hazards and Management Issues:

Blast overpressure, fragmentation, thermal and noise effects from intentional or accidental detonation or deflagration of military munitions, which may cause harm to the public, employees, environment, and the DOE/NV mission in the conduct of this work activity. Certification, inspection, and maintenance of facilities, equipment, and vehicles used to support this work activity. Munitions accountability and Control refer to WSS 2.10, Occurrence reporting, and WBS 4.2.1, Occupational Safety and Health Programs, for the adopted standards associated with accident and incident reporting and investigation applicable to this work activity.

Section 3 - Standards:

The Necessary and Sufficient set of standards applicable to this work activity is as follows:

Standard	Title
40 CFR, Part 266, Subpart M	Military Munitions
<i>Note Added by BCR 1999-013.</i>	
AFMAN 91-201 - Chapter 2, Sections A-E, and G	Explosives Safety Standards (Explosive Safety Requirements)

Note Added by BCR 1999-013.

The transportation section of this WSS addresses on-site transportation of military munitions in conjunction with the conduct of on-site projects and work activities and does not address off-site transportation and shipment and transportation of military munitions conducted in commerce. Refer to WBS 3.6, Transportation, for requirements governing shipment and transportation in commerce.

A test-execution plan including approved operating procedures shall be developed for each project/test and shall include a project/test specific hazard assessment consistent with WBS 2.12, Hazard Assessment.

The inclusion of specific standards in this WBS does not imply exclusion of other applicable WBS or prescribed standards that are mandated elsewhere.

Army, Navy, Air Force Field Manual 5-250	Explosives & Demolitions
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Note Added by BCR 2004-014

DOD 5100.76-M - Chapter 2.A	Physical Security of Sensitive Conventional Arms, Ammunition, and Explosives (General)
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Note Added by BCR 1999-013.

DOD 5100.76-M - Chapter 5	Physical Security of Sensitive Conventional Arms, Ammunitions, and Explosives (Protection of Non-Nuclear Missiles, Rockets, Ammunition, and Explosives)
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Note Added by BCR 1999-013.

DOD 6055.9-STD, Chapters 1-9 ,12 and Appendix A	DoD Ammunition and Explosives Safety Standards
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Note Added by BCR 1999-013.

DOE M 440.1-1 - Chapter 2, Section 13	DOE Explosives Safety Manual (Operational Safety Testing)
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Note Added by BCR 1999-013.

Navy Manual NAVSEA SW060-AA-MMA-010	Demolition Materials Technical Manual
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Note Added by BCR 2004-014

Nevada Test Site Standard Operating Procedure 5412, Paragraph 5.b	Explosive Safety (Inspection)
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Note Added by BCR 1999-013.

TM-60A-1-1-31	General Information on EOD Disposal Procedures
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Note Note revised by BCR 2002-022.

TM-60A-1-1-31	General Information on EOD Disposal Procedures
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Note Note revised by BCR 2002-022.

Section 4 - Measurement Parameters:

Reportable incidents of security violations involving munitions.

Loss of munitions.

Number of discrepancies in accountable munitions.

Number and duration of current waivers and exemptions.

Number of reportable incidents of safety violation and deficiencies involving munitions.

Number of negative public reports attributed to military munitions operations that may adversely affect the public's perception of DOE/NV's ability to conduct its primary mission.

Section 5 - Implementation Considerations:

An implementation plan shall be developed by NNSA/NSO. Contractor and users shall assess current compliance with stated standards, identify deficiencies and propose corrective actions to achieve compliance.

Explosives Safety Site Plans developed in accordance with DoD 6055.9-STD shall be reviewed and approved by the Manager NNSA/NSO.

Waivers and Exemptions to the standards defined in this WSS shall be approved by the Manager DOE/NV.

Acceptability of compensatory measures as validated by competent analysis may be considered for the compliance with security control requirements for military munitions stored at facilities under the purview of DOE/NV.

A safety review and authorization process shall be established and implemented for project/test which utilize military munitions.

Initiation of military munitions is conducted under either routine or emergency conditions. Emergency initiation is conducted under conditions when the munition is in an unsafe or unstable condition as determined by competent authority. In such cases initiation may be effected in-place at the project site or location or the munitions may be transported to a permitted hazardous waste treatment facility.

Section 6 - Work Environment:

This work activity is conducted at explosives sited facilities and areas located primarily at the Nevada Test Site.

Section 7 - Uncertainties or Issues:

None

Section 8 - Training:

Personnel who work with military munitions will be trained and qualified in the tasks to be performed. Personnel performing emergency disposal of military munitions will be qualified as munitions emergency response specialists

2.13 ***Military Munitions***

Latest Revision: 5/19/04

as defined in 40 CFR Section 260.10.

Section 9 - Vulnerabilities:

Implementation may require development of NNSA/NSO supplemental directives to ensure consistent interpretation and implementation by the NNSA/NSO contractors and user organizations.

Section 1 - Work Activity:

This work activity addresses handling and employing high and low order explosives (both military and commercial-off-the-shelf) in support of CTOS activities. Explosives related activities include:

- . Assembling, handling, storing, transporting, processing, or testing of explosives, pyrotechnics and propellants, or assemblies containing these materials;
- . Research, Development, Test, and Evaluation (RDT&E) of high explosives in support of the military, law enforcement, and intelligence communities;
- . Training and demonstrations for the aforementioned plus state and local first responders;
- . Classified and unclassified database development;
- . Combat engineering applications, and
- . Range clearing activities.

This work activity does not include explosives in support of:

- . Tri-lab/stockpile stewardship activities.
- . Protective forces activities; protective force use of munitions is addressed in WBS 4.6, Firearms Safety;
- . Mining activities, addressed in WBS 2.3-Surface Mining and 2.4-Underground Operations, and
- . Construction activities, addressed in WBS 2.8-Construction.

Execution of this work activity requires the interface with and application of other Work Smart Standards work activities, and the standards cited therein. Typical WSS work activities for which this interface is expected are listed below. Unless otherwise indicated, this Format 1 concurs with the stated Work Smart Standards.

1.3.1 - Procurement. In addition to the WSS activities cited, the NTS warehouse must be notified of a pending shipment of explosives in order for the vendor to receive payment.

2.1.4 - Solid Waste.

2.10 - Occurrence Reporting.

3.6b (BN) -Transportation.

4.2.1 - Occupational Safety and Health Program.

4.2.2 - Industrial Hygiene.

4.7 - Quality Program.

Section 2 - Hazards and Management Issues:

Environment, safety, and health hazards associated with work activities described in Section 1 include:

- . Blast effects, to include overpressure, fragmentation, thermal effects, and noise effects
- . Security of stored munitions

- . Certification, inspection, and maintenance of facilities, equipment, and vehicles used to support this work activity

Management issues include:

- . Training and certification of personnel conducting the work
- . Operations conducted IAW applicable standards
- . Participation in lessons learned
- . Development of classified databases or other classified work, conducted IAW applicable IWFO procedures

Section 3 - Standards:

The standards cited below apply only to the specific portions identified. In the event of any subject-matter overlap, DOE M 440.1-1 will take precedence.

Standard

Title

DOE M 440.1-1, Pantex version

DOE Explosives Safety Manual

Note Chapters 2 through 9 only. Added by BCR 2002-022.

United States Army Field Manual 5-250

Explosives and Demolitions

Note Chapters 1 through 8 only (exclusive of Chapter 6, Section 111, Transportation and Storage Safety, addressed in DOE M 440.1-1). Added by BCR 2002-022.

United States Navy NAVSEA
SW060-AA-010

Technical Manual Demolition Materials

Note Chapters 1, 3 through 7, 9, and 10 only. Added by BCR 2002-022.

Section 4 - Measurement Parameters:

Parameters that can be measured for explosives operations include:

- . Events or conditions involving explosives that result in a DOE or NNSA reportable occurrence
- . Accurate inventory accountability
- . Adequate physical protection of explosives

Additionally, work activities described in Section 1 that are conducted as Work for Others fall under the purview of DOE O 481.1B, Work for Others (Non-Department of Energy Funded Work). Satisfactory performance of the work activity is therefore defined as meeting the contracted scope of work, on schedule, within budget

Section 5 - Implementation Considerations:

1.3.1 - Procurement. In addition to the WSS activities cited, the NTS warehouse must be notified of a pending shipment of explosives in order for the vendor to receive payment.

3.6b (BN) - Transportation. The only issues ascertained by CTOS are a final across the board (for all parties concerned) decision on where public domain ends/starts and the contention that intra-site shipments are considered in commerce. Additionally an interchange yard (trans-load site) location needs to be identified when unload and reload of hazardous materials is required.

Section 6 - Work Environment:

The work activities addressed in Section 1 occur in a number of different environments, to include: DOE/NNSA and non-DOE/NNSA classroom facilities, NTS sites, and explosives storage facilities. Actual use of explosives can be conducted at customer facilities as well as the NTS.

Section 7 - Uncertainties or Issues:

N/A. However, as work scope and missions change relative to the work activity described in Section 1, this Format-1 will be reviewed and revised accordingly.

Section 8 - Training:

All personnel using or supervising the use of explosives related activities as defined in Section 1, will be trained and qualified in accordance with DOE M 440.1-1, DOE Explosives Safety Manual, Chapter V, Training.

Section 9 - Vulnerabilities:

Non-compliance with applicable standards, directives, or regulations could lead to severe safety infractions, fines, penalties, or shutdown of work activities. Section 2 specifically addresses those issues requiring consideration for the maximum possible reduction of program vulnerabilities.

Section 1 - Work Activity:

This work activity is applicable to all organizations that conduct Live Fire operations, employ explosives, require Air Space or conduct other activities at the Nevada Test Site (NTS). These WSS apply only to WFO, Military type, reoccurring training activities conducted at the NTS. Except for airspace safety requirements, these provisions do not apply to development, proof and function test ranges or laboratories.

The NTS contains multi-purpose training areas configured with live fire maneuver corridors and dud producing weapon impact areas. They provide tactical units multiple air, vehicular, and foot infiltration opportunities. A wide range of weapons may be fired from ground, vehicle, and aircraft platforms. The weapons include, but are not limited to pistols, infantry assault rifles; long range sniper rifles; light and heavy machine guns; automatic and shoulder fired grenade launchers; light, medium, and heavy anti-tank recoilless weapons, rockets, and missiles; mortars; aerial fired 105mm howitzers and cannons. Explosives can be used including, but not limited to, a wide variety of standard and non-standard military and non-military explosives, not to exceed 750 pounds per shot; electric and non-electric firing systems; shape, cratering, and platter charges, claymores, and barrier clearing charges. The charges will be applied to a wide variety of targets, to include, but not limited to, earth, wood, concrete, and steel. Ground parties will remain in designated maneuver areas and ordnance will be fired to stay within designated impact areas.

Section 2 - Hazards and Management Issues:

The included standards provide procedures for the safe firing of ammunition, demolitions, lasers, guided missiles, and rockets for training.

The standards assist in the development of range safety documentation for all NTS multi-purpose training areas and include guidance for dud areas, unexploded ordnance (UXO) and instructions on reducing UXO to the minimum, tracking UXO, and conducting appropriate range clearing operations to ensure safe range areas are available for training.

These documents will also assist in the establishment of guidance for controlling the use of ranges and live-fire training areas for Work for Others training and activities.

Section 3 - Standards:

Process standards for range operations are performance based and established by reference to US Army requirements. Because client needs are driven by operational requirements, operational requirements are the combination of best practices of the PBMC and military requirements.

Standard	Title
Army Regulation 385-63	Range Safety
Note <i>Applicable sections: Chapter 1: Para 1-1, Subpara b; Para 1-2 and 1-3; Para 1-5, Subparas a, b, c, d, and e. Chapter 2, Para 2-1, Subpara a; Para 2-2, Subpara e and 1st sentence of Subpara f; Para 2-3, Subpara b; Para 2-4, Subparas a, b, and c; Para 2-5, Subpara a (2), (3) and (6); Para 2-6, Subparas b and c; Para 2-7, Subpara c and Subpara e(1)(b). Chapter 3, Para 3-3, Subparas a (1), (2) and (3), b, e, and g; Appendix A, Para DA PAM 385-63 and DODD 6055.9-std.</i>	
Department of the Army Pamphlet 385-63	Range Safety

Note

Applicable sections: Chapter 1: Para 1-5, Subparas a - (1) and (4) and b; Para 1-6, Subparas a - (3), (4), (5), and (8), b - (4), (5), (10), (11), and (12), c - (1), (3), (4), (5), (6), (8), (10), (13), (14), (15), (16) and (19). Chapter 2: Para 2-1, Subparas a, b, c, d, e, f, g, h, i, j, and k; Para 2-2, Subparas a, b, c, d, and e; Para 2-3, Subparas a (5) and (6), c, d, and e; Para 2-4, Subparas b, c, and e - (1) and (2), f - (3) (a-h), 4 - (a), (b) and (c), 5 - (a) and (b), 6, 7, and 8 (a). Chapter 3: Para 3-1, Subparas a, b, c, e, f, g, h, and i; Para 3-2; Para 3-3, Subparas a - (1) and (2), b, e, l, k - (1), (2), (3), (4), and (5) and l; Para 3-4, Subparas a, and b - (1)(a); Para 3-5, Subparas a and b; Para 3-7, Subparas b (2), (4), and c (1), (2) and (3); Para 3-8, Subparas a, b and c; Para 3-9, Subparas c - (1), (2), (3), and (d), d - (2)(a), (b) 1, 2, 4, 5 - (c), (d), (e), (f), (g), (h), (i), (j), (k) - 1 and 2 (l) and (m), (5) - (a), (b), (c), e - (1), (2), (3), (4)(b), (5), (6) (a) and (b), and (7). Chapter 4: Para 4-1, Subparas a, b, and c; Para 4-2, Subparas a and b; Para 4-3, Subparas a, b, c, d, e, f, g, and h; Para 4-4, Subparas a and b; Para 4-5, Subparas a, b, c and d. Chapter 5: Para 5-1, Subparas a, b, and c; Figure 5-1; Table 5-1; Para 5-4, Subparas a and b; Para 5-5, Subparas a, b, c, d, e, f, and g; Para 5-6, Subparas a and b. Chapter 6: Para 6-1, Subparas a and b - (1), (2), (3), (4), and (5), and c; Figure 6-1; Table 6-1; Para 6-2, Subparas a, b, c, d, e, f, g - (1), (2), (3), (4), and (5), h - (1), (2), (3), and (4); Para 6-3, Subparas a, b, c, d - (1), (2), (3) and (4); Para 6-4, Subpara b; Para 6-5, Subpara a, b, c, and d; Para 6-7, Subparas a and b - (1), (5), (6), (7)(a) 1, 2, 3, 4, 5, and 6, (b)(8), (9), (10), (11), c - (1), (2), (3), (4), (5), (6) and (8). Chapter 7: Figure 7-1; Table 7-1; Para 7-2, Subparas a - (1) and (2), b - (1), (2), (3), and (4), c - (1), (2), (3), (4), (5), (6), (7), (8), and (9), d - (1), (2)(a) and (b), (4), e - (1), f - (1); Figure 7-2; Figure 7-3. Chapter 8: Para 8-1, Subparas a - (1), (2), (3), (4), and (5), b - (1), (2), (3), (4), and (5); Figure 8-1; Table 8-1; Para 8-2, Subparas a and b, Figure 8-2; Table 8-2; Figure 8-3; Table 8-3; Figure 8-4; Table 8-4; Figure 8-5. Chapter 9: Para 9-1, Subparas a, b, c, d, and e; Figure 9-1; Table 9-1; Figure 9-2; Table 9-2; Figure 9-3. Chapter 10: Para 10-1, Subparas a, b, c, d, e, f, g, h, i, j, k, l, and m; Figure 10-1; Table 10-1; Para 10-2, Subparas a and f; Table 10-2. Chapter 11: Table 11-5; Table 11-6; Para 11-7, Subparas a, b, c, d, e, and f; Para 11-8, Subparas a - (2), (3), and (4), and b - (1). Chapter 12: Para 12-5, Subparas a - (1), (2), (3), and (4), b - (1), (2), (3), and (4); Para 12-6, Figure 12-6; Figure 12-7; Figure 12-8; Figure 12-9. Chapter 13: Para 13-1, Subparas a, c, d, e, f, and g; Figure 13-1; Table 13-1; Para 13-2, Subparas f and g; Figure 13-2; Para 13-3, Subparas a and b; Figure 13-3; Para 13-4, Subparas a - (1), (2), (3), and (4), b - (1), (2), (3), and (4); Figure 13-4; Para 13-5, Subparas a and d; Figure 13-5. Chapter 14: Para 14-1, Subparas a - (1), (2), and (3), and b; Para 14-2, Subparas a - (1), (2), (3), (4), (5), (6), (7), b, c, and d. Chapter 15: Para 15-1, Subparas a - (1), (2), (3), (4), (5), (6), (7), (8), (9), (10), and (11), b - (2)(a), (b), (c), (d), and (e), (2), (3), (4), and (5), c - (1), (2), d; Figure 15-1; Table 15-1; Para 15-2, Subparas a - (1), (2), (3), and (4), b - (1), (2)(a), (b), (c), (d), (3), (4), (5), (6), (7), and c - (1) & (2); Figure 15-2; Table 15-2; Para 15-3, Subparas a - (1), (2), (3), (4), b - (1), (2), (3), (4)(a), (b), (c), (d), and (e); Figure 15-3; Table 15-3; Figure 15-4; Table 15-4; Figure 15-5; Table 15-5; Figure 15-6; Figure 15-7; Figure 15-8; Figure 15-9; Figure 15-10; Figure 15-11; Figure 15-12. Chapter 16: Para 16-1, Subparas a and b; Para 16-2, Subparas a - (1), (2), and (3)(b), c, d - (1), (2), (4), (5), (6), and (7); Para 16-3, Subparas a - (1), (2), (3), (4), (5), b, c, d, and e. Chapter 17: Para 17-1, Subparas a, b - (4), (5), (6), (7), (8), (9), (10), (12), (13), c, d - (1), (2)(a), (b), (3), (4), (5), e - (1), (2)(a), (b), (c), (d), (3), f - (1) and (2), g - (1)(a), (b), and (c), (2)(a), (b), (3), and h; Para 17-2, Subparas a - (1), (2), b, c, and e; Table 17-2; Para 17-3, Paras a and b; Para 17-4, Subparas a and b; Table 17-4; Table 17-5; Table 17-6; Para 17-10, Subparas a, b, c, d, e, and f; Para 17-11, Subparas a, b, and c; Para 17-12, Subparas a and b; Para 17-3, Subpara a - (1), (2), and (3). Chapter 18: Para 18-1, Subparas a, b, c, d, e, f, h, i, j, k, l - (1), (2), (3), and (4); Para 18-2, Subparas c, d, e - (1) and (2); Para 18-3, Subparas a - (1), (2), and (3), and b. Chapter 19: Para 19-1, Subpara a; Para 19-2, Subpara a; Para 19-3, Subparas b - (1), (2), (3), and (4), c - (1), (2), (3), (4), (5), and (6), and d; Para 19-4, Subpara p; Para 19-5, Subpara a - (1)(a), (b), (c), and (d); Para 19-6, Subparas a, b - (1), (2), (3), and (4). Appendix B: Figure B-1; Table B-1; Figure B-2; Table B-2; Para B-3, Subpara a; Figure B-3; Table B-3; Figure B-4; Table B-4; Table B-5; Table B-6. Appendix C: Para C-1, Subparas a, c and d; Figure C-1; Para C-2, Subparas a, b, c - (1), (2), (3); Figure C-2; Figure C-3; Para C-5, Subparas a and b; Figure C-5; Para C-6, Subparas a and b; Figure C-6; Figure C-7; Figure C-8; Figure C-9; Figure C-10; Figure C-11; Figure C-12; Figure C-13.

Section 4 - Measurement Parameters:

Reportable incidents of the defined work scope exceeded at the NTS multi-purpose training areas.

Number of identified work stoppages or occurrences.

Number and duration of current waivers and exemptions to training area requirements.

Number of reportable incidents of safety violation and deficiencies.

Section 5 - Implementation Considerations:

These documents will be implemented through the development and approval of a Nevada Test Site (NTS) Multi-Purpose Training Complex Manual (MPTCM), that will be applicable to all non-tenant organizations that conduct Live Fire operations, employ explosives, require Air Space or conduct other activities at the Nevada Test Site (NTS). BN personnel in support of these activities comply and enforce the manual requirements. This Procedure supports the Activity Agreement between NNSA/NSO and the Sponsor. The obvious applications of this document are for traditional NTS training areas, however; any NTS facility identified in the Sponsor's Concept of the Operation and authorized by NNSA/NSO may be included. Operations that do not fit within the scope of this Procedure must be addressed through the secondary Real Estate Operations Permit (REOP) process.

Section 6 - Work Environment:

PBMC Combating Terrorism Programs personnel will interact with work for others sponsors and employees of NTS Operations in various settings. These settings include a variety of locations ranging from typical office environments to on-site NTS multi-purpose complex training areas providing oversight in varied weather conditions. Working conditions during operations at on-site NTS multi-purpose complex training areas are diverse and potentially hostile, requiring the utmost attention to safety.

Section 7 - Uncertainties or Issues:

None

Section 8 - Training:

None

Section 9 - Vulnerabilities:

Implementation may require development of PBMC supplemental directives to ensure consistent interpretation and implementation by user organizations.

Section 1 - Work Activity:

This work activity covers construction, operation, management, support, and decommissioning of the hazard category 2 and 3 non-reactor nuclear facilities.

Execution of this work activity requires the interface with and application of other Work Smart Standards work activities and the standards cited therein. Below are the typical WSS work activities for which interfacing is expected. Others will be incorporated as needed:

- 1.8-Administrative Systems and Controls
- 2.1-Occurrence Reporting
- 2.1.7-Radioactive Waste
- 2.7.1-Design Engineering
- 3.4-Facility Maintenance
- 3.6-Transportation
- 3.7-Industrial Security
- 4.1.2-Fire Protection: Fire Prevention Activities
- 4.2.1-Occupational Safety & Health Programs
- 4.2.2-Industrial Hygiene
- 4.4-Radiation Protection
- 4.5-Environmental Protection Program
- 4.6-Firearms Safety
- 4.8-Emergency Management Program and System
- 4.9-Environmental Monitoring Program

Section 2 - Hazards and Management Issues:

Environment, Safety, and Health hazards associated with management, support, operation, and decommissioning of non-reactor nuclear facilities described in Section 1 include:

- Nuclear/radiological (e.g., human exposure, environmental releases)
- Chemical (e.g., human exposure, environmental releases) · Standard industrial safety (e.g., slip, trip, fall, equipment operation, equipment handling, energy sources, heat stress)
- Environmental impact (e.g., degradation of the existing ecology)
- Nuclear criticality safety
- Transportation concerns (e.g., motor vehicle accidents)
- Fire hazards
- Natural phenomenon hazards

Management Issues include:

- Nuclear facility hazard categorization
- Establishing a Documented Safety Analysis consistent with Department of Energy nuclear safety basis regulations
- Operations of the non-reactor nuclear facility in accordance with the approved Safety Authorization Basis

- Regulatory required Quality Assurance Requirements (10 CFR 830, Subpart A)
- Establishment of design criteria
- Design, procurement, and construction
- Non standardized pressure systems design
- Integrity of critical structures, systems and components (SSCs)
- Procured items meeting design specifications
- Operation of the non-reactor nuclear facility in accordance with quality assurance requirements
- Price-Anderson Amendment Act concerns
- Assurances of readiness
- Obtaining field office operations authorization
- Participation in lessons learned

Section 3 - Standards:

The standards listed below apply to all facilities described in Section 1 of this format-1, unless a more limited application is specified in the note following a standard.

Standard

Title

10 CFR 830

Nuclear Safety Management

Note Added by BCR 2002-012. N/A

DOE O 420.1A, CRD

Facility Safety

Note Added by BCR 2003-041, replaced 420.1 change 3 with 420.1A. 420.1A, Contractor Requirements Document, Section 4.2 - Fire Protection, Subsection 4.2.1 - General Program Requirements is addressed through application of WBS 4.1.2 - Fire Protection: Fire Prevention Activities. Only the following ANSI/ANS standards apply to the current and projected BN workscope, BCR 2004-019, 9/2/04: ANSI/ANS-8.1-1998 Nuclear Criticality Safety In Operations with Fissionable Material Outside Reactors; ANSI/ANS-8.3-1997 Criticality Accident Alarm System; ANSI/ANS-8.7-1975 (R87) Guide for Nuclear Criticality Safety in the Storage of Fissile Materials; ANSI/ANS-8.10-1983 (R88) Criteria for Nuclear Criticality Safety Controls in Operations with Shielding and Confinement; ANSI/ANS-8.15-1981 (R87) Nuclear Criticality Control of Special Actinide Elements; ANSI/ANS-8.19-1984 (R89) Administrative Practices for Nuclear Criticality Safety; ANSI/ANS-8.21-1995 Use of Fixed Neutron Absorbers in Nuclear Facilities Outside Reactors

DOE O 425.1B, CRD

Startup and Restart of Nuclear Facilities

Note Added by BCR 2002-012. N/A

DOE O 440.1A, CRD, Paragraphs 20 & 22 only

Worker Protection Management for DOE Federal and Contractor Employees

Note Added by BCR 2002-012. Only paragraphs 20, Pressure Safety & 22, Suspect and Counterfeit Items Controls (SC&I) apply. Paragraph 22, SC&I, applicable only to 2.X work activities, will be implemented in accordance with: contractually specified Quality Assurance Standards; contract clauses regarding safety management, e.g., 970.5204-2, Integration of Environment, Safety and Health into the Work Planning and Execution (June 1997); contractually specified workmanship and materials requirements. Note revised by BCR 2003-021.

DOE O 5480.19 Chg 2

Conduct of Operations Requirements for DOE Facilities

Note Added by BCR 2002-012. N/A

2.X Hazard Category 2 & 3 Non-Reactor Nuclear Facilities

Latest Revision: 9/2/04

DOE O 5480.20A Chg 1

Personnel Selection, Qualification, Training and Staffing Requirements at
DOE Reactor and Non-Reactor Nuclear Facilities

Note Added by BCR 2002-012. N/A

NV M 421.X

Nuclear Facility Safety Management

Note Added by BCR 2003-028. Also added to B2 & B3 by same BCR.

Standard 1073-93

Guide for Operational Configuration Management

Note Added by BCR 2004-006, 4/21/04. Relocated from B3 list.

DOE O 433.1, CRD

Maintenance Management Program for DOE Nuclear Facilities

Note Added by BCR 2002-012. N/A

Section 4 - Measurement Parameters:

None specific to this work activity.

Section 5 - Implementation Considerations:

Implementation of these standards requires that a number of infrastructure changes be made to support operation, maintenance and training for facilities addressed in Section 1. Several of the standards require that programs, e.g. training, conduct of operations, and maintenance, be developed for the covered facilities and be approved by the Department of Energy Field Office Manager. Each facility addressed in Section 1 must have a Documented Safety Analysis meeting the requirements of 10 CFR 830 Subpart B, Safety Basis Requirements. Readiness activities (Operational Readiness Review or Readiness Assessment) are required for the start or restart of facility addressed in Section 1. Maintenance standards require that a Systems Engineer Program be established to support the maintenance and configuration control of the SSCs for the facilities addressed in Section 1.

Implementation of the standards noted in Section 2 will impact current budget and schedule due to a significant change in requirements. Recognizing that full compliance with the standards cited in Section 3 will take in excess of one year, compensatory measures will be needed to minimize risk during implementation.

Section 6 - Work Environment:

Management, support, operation, and decommissioning of facilities addressed in Section 1 occur in a number of varied work environments. These include process facilities with radiological areas, SSCs, and equipment; facilities undergoing decontamination and demolition; shallow land burial operations; as well as industrial storage locations which use heavy equipment.

Section 7 - Uncertainties or Issues:

The work activity description and standards specified herein address current and foreseeable facilities (as defined in Section 1). As NNSA/NV work scope and missions change relative to the work activity described in Section 1, this format-1 needs to be reviewed and revised accordingly.

It is recognized that significant effort will be required to implement the standards noted in Section 2. The exact impact on budget, schedule and funding is uncertain but is believed to be significant.

Section 8 - Training:

There are no known unique or special indoctrination, training, and/or certification requirements beyond those identified in the standards for this WBS.

Training Implementation Matrices are required under DOE O 5480.20A, Personnel Selection, Qualification, Training and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities.

Section 9 - Vulnerabilities:

Non-compliances with applicable standards or directives could lead to fines, penalties, and shutdown of work activities. Section 2 addresses issues requiring consideration for reducing program vulnerabilities. Loss of trust and confidence in the technical ability of NNSA/NV to conduct non-reactor nuclear activities under safety work standards could impact the ability to attract new projects.

Section 1 - Work Activity:

The major activities associated with Subcritical Experiments at the NTS include:

- " Subcritical Experiment activities
- " Receipt of SNM and high explosives at the DAF, U1a, or other approved location
- " Assembly of SNM and high explosives at the DAF, U1a, or other approved location
- " Disassembly of SNM and high explosives at the DAF, U1a, or other approved location
- " Staging of SNM and high explosives at the DAF, U1a, or other approved location
- " Moving or transporting SNM and high explosives on the NTS
- " Emplacing and sealing SNM and high explosives in U1a or other approved location.

Execution of the above work activities requires interface with and application of other BN Work Smart Standards (WSS) work activities and the standards cited therein.

Section 2 - Hazards and Management Issues:

For the purposes of 10CFR830 implementation, Subcritical Experiments are defined as a limited life nuclear activity.

Subcritical Experiments involve operations using both Special Nuclear Material (SNM) and High Explosives (HE) in a subcritical configuration. Subcritical Experiment operations include:

- " Receipt
- " Loading and unloading
- " Un-packaging and packaging
- " Inspection
- " Staging and assembly
- " Transportation
- " Insertion, emplacement, and stemming
- " Arming, timing, and firing systems
- " Experiment diagnostics
- " Re-entry

Environment, Safety, and Health hazards associated with subcritical experiment operations described in Section 1 include:

- " Nuclear/radiological (e.g., human exposure, environmental releases)
- " Chemical (e.g., human exposure, environmental releases)
- " Standard industrial safety (e.g., slip, trip, fall, equipment operation, equipment handling, energy sources, heat stress)
- " Environmental impact (e.g., degradation of the existing ecology)
- " Transportation concerns (e.g., motor vehicle accidents)
- " Fire hazards
- " Natural phenomenon hazards

Management issues include:

- " Nuclear facility hazard categorization
- " Establishing a Documented Safety Analysis consistent with Department of Energy nuclear safety basis regulations
- " Regulatory required Quality Assurance requirements (10 CFR 830, Subpart A)
- " Establishment of design criteria
- " Design, procurement, and construction
- " Non Standardized pressure system design
- " Integrity of critical structures, systems, and components (SSCs)
- " Procured items meeting design specifications
- " Price-Anderson Amendment Act (PAAA) concerns
- " Assurances of readiness
- " Obtaining field office operations authorization
- " Participation in lessons learned
- " Personnel training and qualifications

Section 3 - Standards:

The standards listed below are necessary to provide the special safety consideration warranted by the potential consequences of an accident or unauthorized act. They are sufficient because they cover the entire subject activities allowed at the NTS. This Standards Set, in conjunction with other applicable BN Work Smart Standards is considered necessary and sufficient protection to the workers, public, and environment.

Standard**Title**

10 CFR 830

Nuclear Safety Management

Note *10 CFR 830 Subpart A establishes the quality assurance requirements for contractors conducting activities, including providing items or services that affect, or may affect nuclear safety of DOE nuclear facilities. 10 CFR 830 Subpart B establishes the safety basis requirements for hazard category 1, 2, and 3 DOE nuclear facilities, and also invokes Standards DOE STD 1027-92, Hazard Categorization and Accident analysis Techniques, and DOE STD 3011-94, Guidance for Preparation of TSR and SAR Implementation Plans. Appendix B to DOE STD 3011-94 provides guidance for preparation of a documented safety analysis for subcritical experiment operations.*

NV O 450.X5, CRD

Subcritical Experiments

Note *This Order provides policy and direction and establishes authorities for the Subcritical Experiment Program conducted at the Nevada Test Site. The Order outlines the life-cycle process to ensure the timely, safe and successful accomplishment of tasks consistent with planning, design, fielding, authorization, execution, and evaluation of a subcritical experiment.*

NV O 450.X6

Subcritical Experiments Safety Program

Note *This Order establishes the NNSA/NSO Subcritical Experiment policy, requirements, standards, criteria, authorities and responsibilities for the safe conduct of Subcritical Experiment Operations at the Nevada Test Site. The order also sets forth requirements for implementation of 10 CFR 830, Subpart B, for Subcritical Experiments.*

10 CFR 712

Human Reliability Program

Note *10 CFR 712 is a Federal Regulation which mandates the Human Reliability Program for nuclear operations or activities.*

Section 4 - Measurement Parameters:

Project cost and schedule.
Achievement of scientific and engineering objectives.

Section 5 - Implementation Considerations:

N/A

Section 6 - Work Environment:

Remote locations ranging up to 45 miles from Mercury are common. Underground activities accessed by shafts, tunnels, or adits in a variety of geologic settings.

Section 7 - Uncertainties or Issues:

The work activity description and standards specified herein address current and foreseeable activities (as defined in Section 1). As NNSA/NSO work scope and missions change relative to the work activity described in Section 1, this format-1 needs to be reviewed and revised accordingly.

Section 8 - Training:

There are no known unique or special indoctrination, training, and/or certification requirements beyond those identified in the standards for this WBS.

Section 9 - Vulnerabilities:

Non-compliance with applicable standards or directives could lead to fines, penalties, and shutdown of work activities. Section 2 addresses issues requiring consideration for reducing program vulnerabilities. Loss of trust and confidence in the technical ability of NNSA/NSO to conduct Subcritical Experiment operations under safety work standards could impact the ability to attract new projects.

Section 1 - Work Activity:

The major activities associated with Nuclear Explosive Operations at the NTS include:

- " Damaged Nuclear Weapons activities or operations at G-Tunnel, DAF, or other approved location
- " Improvised Nuclear Device activities or operations at G-Tunnel, DAF, or other approved location
- " Receipt of nuclear explosives at the DAF, or other approved location
- " Assembly of nuclear explosives at the DAF, or other approved location
- " Disassembly of nuclear explosives at the DAF, or other approved location
- " Staging of nuclear explosives at the DAF, or other approved location
- " Emplacing and sealing nuclear explosives in an approved location

Execution of the above work activities requires interface with and application of other BN Work Smart Standards (WSS) work activities and the standards cited therein.

Section 2 - Hazards and Management Issues:

A nuclear explosive is defined as an assembly containing fissionable and/or fusionable materials and main charge high-explosive parts or propellants capable of producing a nuclear detonation (e.g. a nuclear weapon or test device).

Nuclear Explosive operations include:

- " Receipt
- " Loading and unloading
- " Un-packaging and packaging
- " Inspection
- " Staging and assembly
- " Radiography
- " Insertion, emplacement, and stemming
- " Arming, timing, and firing systems
- " Experiment diagnostics

Environment, Safety, and Health hazards associated with nuclear explosive operations described in Section 1 include:

- " Nuclear/radiological (e.g., human exposure, environmental releases)
- " Chemical (e.g., human exposure, environmental releases)
- " Standard industrial safety (e.g., slip, trip, fall, equipment operation, equipment handling, energy sources, heat stress)
- " Environmental impact (e.g., degradation of the existing ecology)
- " Nuclear criticality safety
- " Transportation concerns (e.g., motor vehicle accidents)
- " Fire hazards
- " Natural phenomenon hazards

Management issues include:

- " Nuclear facility hazard categorization
- " Establishing a Documented Safety Analysis consistent with Department of Energy nuclear safety basis regulations
- " Regulatory required Quality Assurance requirements (10 CFR 830, Subpart A)
- " Establishment of design criteria
- " Design, procurement, and construction
- " Non Standardized pressure system design
- " Integrity of critical structures, systems, and components (SSCs)
- " Procured items meeting design specifications
- " Price-Anderson Amendment Act (PAAA) concerns
- " Assurances of readiness
- " Obtaining field office operations authorization
- " Participation in lessons learned
- " Personnel training and qualifications

Section 3 - Standards:

The standards listed below are necessary to provide the special safety consideration warranted by the potential high consequences of an accident or unauthorized act. They are sufficient because they cover the entire subject activities allowed at the NTS. This Standards Set, in conjunction with other applicable BN Work Smart Standards is considered necessary and sufficient protection to the workers, public, and environment.

Standard**Title**

10 CFR 830

Nuclear Safety Management

Note *10 CFR 830 Subpart A establishes the quality assurance requirements for contractors conducting activities, including providing items or services that affect, or may affect nuclear safety of DOE nuclear facilities. 10 CFR 830 Subpart B establishes the safety basis requirements for hazard category 1, 2, and 3 DOE nuclear facilities, and also invokes Standards DOE STD 1027-92, Hazard Categorization and Accident analysis Techniques, and DOE STD 3011-94, Guidance for Preparation of TSR and SAR Implementation Plans. Appendix B to DOE STD 3011-94 provides guidance for preparation of a documented safety analysis for subcritical experiment operations.*

DOE O 452.2B, CRD

Safety of Nuclear Explosive Operations

Note *This Order establishes requirements and responsibilities for ensuring the safety of both routine and planned nuclear explosive operations and associated activities and facilities. This Order also establishes requirements for locations identified as potential sites for assembling, disassembling, and storing nuclear explosives and associated activities.*

NV O 452.2B, CRD

Safety of Nuclear Explosive Operations

Note *This Order supplements DOE O 452.2B and establishes NNSA/NSO policies, authorities, and responsibilities ensuring the safety of nuclear explosive operations conducted at the Nevada Test Site.*

DOE DP STD 3016-99

Hazard Analysis Reports for Nuclear Explosive Operations

Note *The authorization basis for DOE nuclear explosive operations requires a Hazard Analysis Report (HAR) as set forth in DOE O 452.1B. This standard clarifies existing requirements and provides guidance for the HAR development process.*

DOE O 452.1B, CRD

Nuclear Explosive and Weapon Surety Program

Note This Order establishes requirements and responsibilities to ensure adequate safety, security and control of nuclear explosives and nuclear weapons.

NV O 452.1B, CRD

Nuclear Explosive and Weapon Surety Program

Note This Order supplements DOE O 452.1B and establishes NNSA/NSO policies, authorities, and responsibilities for the Nuclear Explosive and Weapon Surety Program conducted at the Nevada Test Site.

10 CFR 712

Human Reliability Program

Note 10 CFR 712 is a Federal Regulation which mandates the Personnel Assurance Program for nuclear operations or activities.

Section 4 - Measurement Parameters:

Project cost and schedule.

Achievement of scientific and engineering objectives.

Section 5 - Implementation Considerations:

N/A

Section 6 - Work Environment:

Remote locations ranging up to 45 miles from Mercury are common. Underground activities accessed by shafts, tunnels, or adits in a variety of geologic settings.

Section 7 - Uncertainties or Issues:

The work activity description and standards specified herein address current and foreseeable activities (as defined in Section 1). As NNSA/NSO work scope and missions change relative to the work activity described in Section 1, this format-1 needs to be reviewed and revised accordingly.

Section 8 - Training:

There are no known unique or special indoctrination, training, and/or certification requirements beyond those identified in the standards for this WBS.

Section 9 - Vulnerabilities:

Non-compliance with applicable standards or directives could lead to fines, penalties, and shutdown of work activities. Section 2 addresses issues requiring consideration for reducing program vulnerabilities. Loss of trust and confidence in the technical ability of NNSA/NSO to conduct Nuclear Explosive Operations under safety work standards could impact the ability to attract new projects.

3.1 *Housing*

Latest Revision: 9/30/96

Section 1 - Work Activity:

Housing is an NTS-only activity. Housing facilities are provided on the NTS to enable workers who must complete work activities on schedule to remain on the site and be readily available. The activity is private, non-public access housing similar to short-term accommodations provided by small city motels. This work activity begins with the receipt of a request for quarters at the site. It can be in response to a reservation request or the physical presence of an individual at the Housing Office in Mercury, NV. Current suspension of the test program has reduced the demand below the available supply of rooms, so advance reservations and the attendant potential to resolve conflicts is not as significant as it once may have been. Facilities exist both in Mercury and in Area 12, but only the Mercury facilities are currently in use.

The actual housing service consists of three components: office functions, housekeeping, and guest safety. Each is described below.

Office Functions: The activity includes reservations, guest check-in and check-out, billing, and the subordinate accounting functions, e.g., accounts receivable. The basic reservation principle is first come, first served. Check-in involves positive identification of the guest and assurances of the correct billing information. Check-out involves assuring that all applicable charges have been accrued to the guest and either direct collection or provisions for billing to the parent organization have been made.

Housekeeping: The activity includes the actual work involved in linen service and cleaning. Cleaning includes space cleaning and sanitation. Sanitation involves trash removal and fixture sterilization.

Guest Safety: This activity includes the efforts to protect guests from slips, trips and falls and to assure their personal safety and the security of their personal property. This activity relies on employee and management awareness to identify potentially faulty conditions and administrative controls over access.

This work description assumes that the issues related to the maintenance of the structure and services (e.g., potable water, electricity, sewage, heating and cooling) are described and assessed as part of WBS 3.4, Facility Maintenance, and WBS 3.8, Utilities.

Section 2 - Hazards and Management Issues:

Office Functions: The hazards that derive from this activity are the same as those associated with any office type environment.

Housekeeping and Guest Safety: Hazards associated with the housing work activity, described in the sub-tasks above, potentially can affect the worker as well as the resident guest. The most significant hazards, communicable diseases and blood borne pathogens, evolve from inadequate cleaning and, for the workers, failure to use correct protective equipment during cleaning. These hazards derive primarily from the sanitation portion of the cleaning sub-activity, specifically the removal of trash and the sterilization of room fixtures. The potential injury from lifting heavy loads is attendant with the linen. Slips, trips, and falls because of loose carpets, wet floors, or faulty handrails also exist. Staff as well as guests are exposed to this type of hazard.

3. 1 *Housing*

Latest Revision: 9/30/96

Management issues involve: 1) availability of clean, comfortable rooms sufficient to meet demand, 2) an adequate supply of clean linen, 3) prompt payment, room access control and key control, and 4) adequate management oversight to identify deteriorating conditions, potential hazards, or unsafe work practices.

Section 3 - Standards:

In the course of information gathering for this work activity review, a Nye county motel owner was interviewed relative to standards utilized. This individual identified a de facto industry standard adopted by many commercial establishments. That "standard" is the rating process utilized by the American Automobile Association for grading hotels and motels. These involve safety considerations, but relate mainly to comfort and convenience.

The standards for this work activity are the same as the commercial industry standards used by motels in the state of Nevada. The Necessary and Sufficient set of standards for Housing are:

Standard	Title
29 CFR 1910.1030	Blood Borne Pathogens
<i>Note</i> 29 CFR 1910.132 and 1910.1030 for mitigation of Blood borne pathogens (as implemented through WBS 4.2.2 Industrial Hygiene, and WBS 4.3, Medical Programs).	
Nevada Administrative Code (NAC) 447	Public Accommodations
<i>Note</i> General requirements on cleanliness and laundry that are applicable to commercial businesses.	
29 CFR 1910.132	Personal Protective Equipment, General Requirements
<i>Note</i> 29 CFR 1910.132 and 1910.1030 for mitigation of Blood borne pathogens (as implemented through WBS 4.2.2 Industrial Hygiene, and WBS 4.3, Medical Programs).	
40 CFR 261.4, Exemptions, b.1	Solid Wastes Which Are Not Hazardous Waste
<i>Note</i> Identifies "Household Waste" as not hazardous waste. Household waste is defined as "... any material (including garbage, trash and sanitary wastes in septic tanks) derived from households (including ... hotels and motels,...)." This allows for handling of waste generated from housing as non-hazardous waste.	

Section 4 - Measurement Parameters:

- Number of occupied rooms per custodian.
- Occupancy rate.
- Income versus total housing costs.
- Customer safety.
- Customer satisfaction surveys.

Section 5 - Implementation Considerations:

Adequate cleaning procedures that prevent exposure of guests to these hazards are already implemented. The exposure to slips, trips and falls is mitigated by a thorough maintenance program, prevention awareness by the workers, signs prominently displayed, and management's constant oversight to include physical inspections. The

3.1 *Housing*

Latest Revision: 9/30/96

current work practices address the identified standards.

The housing activity is one of several activities that has incorporated the worker Performance Based Safety Program. In the Performance Based Safety Program, workers are trained as observers. They observe peers in conduct of the work in an effort to identify unsafe practices and then work as a group to revise them. Observers rotate back as workers and another member of the group becomes the observer to enhance safety awareness across the group.

A comprehensive back injury prevention and office safety program should be developed and implemented.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

The standards may need to be reviewed if housing facilities are reopened in the forward area on a temporary or permanent basis.

The trailer park has been closed. If the decision is made to reopen the trailer park, any additional standards associated with that activity will have to be identified.

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

3. 2 Food Services

Latest Revision: 9/30/96

Section 1 - Work Activity:

Food service is necessary to support the work at the Nevada operations. The program is expected to provide approximately three hundred thousand meals per annum. In addition catering is to be provided for site tours, other official visits, box lunches, and the Yucca Mountain Project as required. Food service activities for the NTS are :

- Menu planning, food preparation; and serving.
- Wrapping and loading the food into food vending machines.
- Transportation suitable and acceptable storage of food and other supplies.
- Cleaning of all food service facilities, including vending machines.

Food service facilities at NTS are licensed and inspected by the State of Nevada Department of Environmental Health.

Section 2 - Hazards and Management Issues:

Hazards to food services personnel are not unique. Examples are hot stoves, steam, handling cutlery, machinery such as slicers and mixers, lifting, pulling and pushing. Food-borne illness; liquid or food spills; blocked fire exits, wet floors, etc., are some of the hazards to customers and are no different than those found in commercial practice.

Section 3 - Standards:

The necessary and sufficient standards for Food Services are:

Standard	Title
29 CFR 1910.1030	Blood Borne Pathogens
<hr/>	
29 CFR 1910.132	Personal Protective Equipment, General Requirements
<hr/>	
Nevada Administrative Code (NAC) 446	Food and Drink Establishments
<hr/>	

Note

Note Applicable provisions of 1910.132 for mitigation of communicable disease.

Note (The health card requirements are applicable to Clark County only.) This standard is utilized because all of the food service facilities are licensed by the State of Nevada. These licenses are issued in accordance with the requirements of the above publication. The Nevada Code complies with the 1993 U.S. Public Health Service Food Code. The subcontracts to vendors also include a reference to the applicable state regulations for food establishments.

Section 4 - Measurement Parameters:

- Number of meals served per Food Service FTE.
- Number of Performance Based Safety Observations compared to the injuries/illnesses.

3. 2 *Food Services*

Latest Revision: 9/30/96

- Customer satisfaction surveys.
- Overall contract performance.

Section 5 - Implementation Considerations:

Current practices already implements the above standards resulting in minimal impact.

The principal hazard in food services is the potential outbreak of food borne illness. Food service safety is maintained through personal cleanliness and proper food handling. The adoption of the Hazard Analysis of Critical Control Point (HACCP) process to assure protection is an integral part of the food services program presently in place. The staff is trained and certified in the fundamentals of the HACCP.

Food services are inspected routinely by the Contractor's Sanitarian as well as the management and the State of Nevada Department of Environmental Health which performs an annual inspection of the NTS food services facilities as required by the license issued by the State. All food service facilities at the NTS are licensed by the State of Nevada in accordance with the Nevada Administrative Code.

Public safety is a concern and as such the facility is to be maintained in accordance with occupational safety and health standards. The daily inspection of foods, food preparation and storage areas, monitoring of refrigeration temperature check sheets, menu evaluation, monitoring of temperature of prepared foods and the inspection of hot holding cabinets provide oversight of the work activities.

Food services for the remote locations, including North Las Vegas are provided by a subcontractor. The subcontractor is required to meet federal and state regulations for food service.

NTS Food Services is a member of the National Restaurant Association, Nevada Restaurant Association, and National Automated Merchandising Association. Memberships and participation with industry associations, local and national, allows access to changes and input to industry practices.

Management will inspect the entire operation on an unscheduled, but regular basis.

A comprehensive back injury prevention program should be developed and implemented for this work activity.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

As downsizing occurred, some facilities were closed. Facilities may need to be reactivated to support other work for limited periods. Reopening of facilities must include inspections by ES&H professionals. State licenses may also have to be reviewed and updated.

The 1995 Inspector General audit recommended zero subsidy for food services. The provision of meals at the NTS is considered a support service function and is budgeted annually. As budgets decline, adjustments in the

3. 2 *Food Services*

Latest Revision: 9/30/96

methods of service and the amounts charged for meals may be required.

Section 8 - Training:

Lead culinary employees are trained in the HACCP program requirements to ensure a high quality of food service.

Section 9 - Vulnerabilities:

N/A

3.3 *Aviation Operations*

Latest Revision: 3/1/05

Section 1 - Work Activity:

This work activity provides aviation support to operate and maintain government aircraft located at RSL-A and RSL-N. Operations include supporting world-wide government programs under the purview of the Department of Energy. Aircraft used to support operations include both rotary-wing and fixed-wing platforms. Aviation support includes aircraft maintenance, ground support, emergency response to radiological incidents, routine non-emergency collection of scientific data, and an aerial imagery collection capability. Aircraft operate as public or civil depending on the mission.

This activity also provides:

- " Airworthy and mission equipped aircraft
- " Qualified aircrews proficient in aircraft and mission operations
- " An Aviation Operations Manual
- " An Aviation Operations Training Manual
- " 24-hour emergency response capability of FW and RW aircraft (site specific)
- " Aerial surveys
- " Expert assistance in developing and integrating remote sensing systems to with flight operations
- " Waivers to FAA regulations
- " Coordination for operations within special use airspace
- " Maintenance of ground support equipment
- " Subject Matter Experts in aviation operations, aviation safety and aviation maintenance to support BN, NNSA/NSO and other government agency's operations and business initiatives.

Execution of this Work Activity requires the interface with and application of other Work Smart Standards work activities and the standards cited therein. Below are the typical WSS work activities for which interfacing is expected. Others will be incorporated as needed:

- 1.5.1 Records Management & Document Control
- 2.10 Occurrence Reporting
- 2.12 Hazard Assessment
- 3.3.1 Aviation Oversight
- 3.6 Transportation
- 4.2.1 Occupational Safety and Health Programs
- 4.2.2 Industrial Hygiene
- 4.3.2 Occupational Medical Services
- 4.5 Environmental Protection Program

Section 2 - Hazards and Management Issues:

Hazards and management issues associated with aviation are typical of those in similar civil and commercial flying operations.

Section 3 - Standards:

The necessary and sufficient set of standards are:

3. 3 Aviation Operations

Latest Revision: 3/1/05

Standard

Title

14 CFR (Only applicable portions as noted below)

Aeronautics and Space

Note Hazards and management issues associated with aviation are typical of those in similar civil and commercial flying operations. Chapter 1, Subchapter A; Subchapter C, Parts 21, 23, 29, 39, 43, 45, 47; Subchapter D, Parts 61, 63, 65, 67; Subchapter E; Subchapter F, Parts 91, 93, 95, 97, 108; Subchapter G, Part 133, Subchapter K, Part 183, Subchapter N, Part 198. Revised by BCR 2004-018, 9/2/04

28 USC 591

Independent Safety Board Act of 1994

Note Hazards and management issues associated with aviation are typical of those in similar civil and commercial flying operations.

49 CFR 171-173, 175, and 178

Hazardous Material Regulations for Transportation

Note Applicable portions will apply when operating as a civil aircraft. Hazards and management issues associated with aviation are typical of those in similar civil and commercial flying operations.

DOE O 440.2B, CRD

Aviation Management and Safety

Note Added by Change Request 2000-018 - 3/19/01. Revised by BCR 2004-018, 9/2/04.

Federal Aviation Administration (FAA)
Advisory Circular 00-1.1

Government Aircraft Operations

Note Hazards and management issues associated with aviation are typical of those in similar civil and commercial flying operations.

International Civil Aviation Organization
(ICAO)

Flight Regulations and Requirements

Note Hazards and management issues associated with aviation are typical of those in similar civil and commercial flying operations.

Office of Management and Budget (OMB)
Circular A-126

Improving the Management and Use of Government Aircraft

Note Hazards and management issues associated with aviation are typical of those in similar civil and commercial flying operations.

Office of Management and Budget (OMB)
Circular A-76

Performance of Commercial Activities

Note Hazards and management issues associated with aviation are typical of those in similar civil and commercial flying operations.

49 CFR 830

Notification and Reporting of Aircraft Accidents or Incidents and Overdue Aircraft and Preservation of Aircraft Wreckage, Mail, Cargo, and Records

Note Hazards and management issues associated with aviation are typical of those in similar civil and commercial flying operations.

Section 4 - Measurement Parameters:

- Aircraft availability rate.

3. 3 *Aviation Operations*

Latest Revision: 3/1/05

- Sufficient trained pilots

- Emergency response timeliness.

Section 5 - Implementation Considerations:

The application of various standards is dependent upon the nature of the assignment, e.g., public vs. civil. A DOE and contractor approved Operations Manual includes the following implementation considerations:

- Flight and duty time limitations.

- Personnel qualifications.

- Aircraft maintenance requirements.

- Flight-following procedures.

- Aviation safety documentation for each mission that has risks not normally accepted by the public.

Section 6 - Work Environment:

Typical environment in and on aviation related facilities e.g. airports, hangars, etc., and within the National Airspace Structure and International Airspace.

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

A DOE and contractor approved Training Manual includes training program requirements.

Section 9 - Vulnerabilities:

N/A

3. 3.1 *Aviation Oversight*

Latest Revision: 1/14/05

Section 1 - Work Activity:

Section 2 - Hazards and Management Issues:

Section 3 - Standards:

Standard	Title
<i>Note</i>	

Section 4 - Measurement Parameters:

Section 5 - Implementation Considerations:

Section 6 - Work Environment:

Section 7 - Uncertainties or Issues:

Section 8 - Training:

Section 9 - Vulnerabilities:

Section 1 - Work Activity:

A formal facility maintenance and repair program assures that active facilities and infrastructure are fully capable of supporting the NNSA mission, while maximizing the useful life and availability of its component systems. Maintenance activities for non-nuclear facilities are governed by DOE O 430.1B, Real Property Asset Management, which contains eight general requirements for a real property maintenance program. Refer to the order for the specific program requirements.

An Annual Maintenance Plan (AMP) is developed to report past performance in the maintenance program and project planning for the next fiscal year. This is the primary document for developing budgetary justifications for maintenance and for describing the plan for reducing deferred maintenance to meet NNSA corporate goals. Information from the AMP is integrated in the Ten Year Comprehensive Site Plan (TYCSP) which describes the plan for accomplishing NNSA strategic goals.

Working definitions for facilities, infrastructure, and types of maintenance are contained in DOE O 430.1B Real Property Asset Management.

Maintenance and repair work is performed in nuclear facilities, as well as non-nuclear facilities, on installed equipment, and in some cases, the installed process equipment and systems. Requirements for maintenance at nuclear facilities is covered in 2.X Hazard Category 2 & 3 Non Reactor Nuclear Facilities.

The operation and maintenance of NNSA Nevada Site Office facilities includes work at remote sites such as the Nevada Test Site located 65 miles northeast of Las Vegas, Nevada, Santa Barbara, on Nellis Air Force Base in Las Vegas, Nevada and on Andrews Air Force Base in Maryland. The M&R work activities must be performed to comply with the host site's ES&H requirements, and in some cases, as specified in an inter-agency support agreement, such as on Air Force Bases.

Maintenance and repair work falls into three general categories sustainment maintenance, activities for modernization and recapitalization, and deferred maintenance.

Sustainment activities include preventive maintenance, predictive maintenance, and corrective maintenance. These maintenance types are defined in DOE O 430.1B Real Property Asset Management.

Modernization and recapitalization activities restore capability or lengthen the expected lifespan of a facility.

The third type of maintenance, deferred maintenance is defined as maintenance that was not performed when it should have been or was scheduled to be which, therefore, is put off or delayed for a future period. Deferred maintenance is identified through physical inspection of facilities and infrastructure by appropriately trained personnel. Inspection results must be documented and costed through use of a nationally recognized method or by use of the DOE CAS system CAIS.

Maintenance and repair work is identified by the following methods:

3. 4 *Facility Maintenance*

Latest Revision: 5/19/04

Work requests are requests from a user group for maintenance or support services for which the site M&R crafts have the skills to perform. Examples of this type of work are hanging a white board, painting an office, or moving furniture. This work activity also includes work to support closed facilities. Facilities that are reopened are inspected to identify, correct, or control hazards.

Service calls are either initiated over telephone or are submitted by the M&R organization for either emergency repairs or for small, quick-to-provide service for minor work on a low priority basis when craft time is available.

ES&H Inspections often result in the identification of work requirements that are entered into the work order system for scheduling.

Preventive maintenance work orders are issued by the Computerized Maintenance Management System (CMMS) for scheduling according to the frequency of service required to maintain the facility or installed equipment recommended by either a code, an industrial standard, by the manufacturer or as a result of historical precedence or an analysis of the historical maintenance data.

Work Orders can be generated as a result of facility condition assessments. Deficiencies requiring repair within one year will be entered into the CMMS, while the balance becomes part of the deferred maintenance backlog.

The detail of work performed varies from location to location. For example, the maintenance of the roads is accomplished by the contractor at the Nevada Test Site, but not on sites where the contractor is a tenant support through a host-tenant agreement.

Modifications are conducted under WBS 2.8, Construction.

Section 2 - Hazards and Management Issues:

The hazards associated with M&R work are typical of those encountered in the commercial sector for personnel performing maintenance and repair work. Examples of these hazards are confined space entries, noise, electricity, falls, flying debris, generating hazardous waste and exposure to toxic and hazardous substances. There are occasional work activities in radiation areas.

Failure to properly maintain and repair a facility can result in hazards to occupants of the facility, e.g., slips, trips, and falls; indoor air quality; and improper or lack of maintenance of life safety code components.

Facilities maintenance not performed when scheduled or as specified in the work instruction can result in the premature failure of equipment or systems, directly affecting the health and safety of the occupants, work delay, project delay, increased project cost, baseline adjustment or mission failure.

Management issues relating to maintenance include work control and documentation, (configuration management) materials and tool control, and training.

Minor modifications as a work activity are addressed as an aspect of the construction work activity, although either the maintenance or construction organization may perform the work.

3. 4 *Facility Maintenance*

Latest Revision: 5/19/04

DOE O 430.1B contains the functional definitions required to accomplish the corporate goal of stabilizing deferred maintenance by FY05 and reducing mission essential deferred maintenance by FY09. Failure to incorporate the approved definitions may increase HQ oversight of the Site Office and open the possibility of reduced or eliminated FIRP funding.

Section 3 - Standards:

The work activities comply with the other program requirements developed through the necessary and sufficient process, including WBS 2.8 Construction.

Rationale: The standards are the same as those found in light commercial industry performing the same type of work in Nevada and at the remote sites. The adoption of this submittal will allow the establishment of a non-nuclear maintenance support organization that uses the same standards accepted within private industry for routine maintenance and repair work.

Standard

Title

DOE O 430.1B, CRD

Real Property Asset Management

Note *Implementation of the DOE O 430.1B Contractor Requirements Document by the end of FY04 shall be considered a mandatory requirement for BN and National Laboratory operated non-nuclear facilities.*

Note: Facility-specific design criteria (drawings, specifications, and vendor data) and equipment manufacturer's recommendations as modified by actual experience.

Section 4 - Measurement Parameters:

There are several methods for measuring the effectiveness and sufficiency of a formal maintenance and repair program:

- Preventive Maintenance Performance
- Customer Satisfaction
- Active Maintenance Backlog
- Proactive vs Reactive Maintenance
- Work Order Estimating Performance
- Age of Open Work Orders
- Quantity of Open Work Orders
- Craft to Support Personnel
- Work Order Cycle Time
- Facility Inspection Status
- Deferred Maintenance Backlog
- Equipment Performance
- Maintenance Bench Marks

This metric set is representative only and is not a required submittal.

Section 5 - Implementation Considerations:

Implementation of the standards from the other applicable program requirements developed through the necessary

3. 4 *Facility Maintenance*

Latest Revision: 5/19/04

and sufficient process are acceptable since they are presently in use.

Repair maintenance work should include the use of original design specifications of manufacture's specifications and recommendations, depending upon availability and practicality. Experience and professional craftsmanship as well as information for similar equipment or facilities may be used in lieu of original specifications. The work must also meet the standards accepted in the appropriate trades for professional craftsmanship. Requests for facility modifications are routed through the engineering department for site condition verification, work scope preparation, and design.

Special projects requested may require specific standards, guides, or recommendations to be implemented. This work is handled separately and in accordance with the standards, guides or recommendations as requested by the client.

Implementation of DOE O 430.1B RPAM may require some significant changes as definitions for various maintenance activities are implemented. The new definitions may affect budgetary reporting and may cause inconsistencies when planning documents are compared across previous years.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

None

Section 8 - Training:

Specialized training may be required for some of the work requests or services. This training is provided on an "as needed" basis, e.g., radiological worker training for work in radiological facilities.

Section 9 - Vulnerabilities:

Some of the older facilities on the NTS do not meet current ES&H condition standards. None of the deficiencies, however, present a serious threat to health, safety or the environment.

Section 1 - Work Activity:

This work activity covers the maintenance, repair, inspection, waste handling and storage, purchase and excess, and equipment control. It involves mobile and stationary equipment and includes the electrical and mechanical aspects of the equipment. The work activity includes work performed at the Nevada Test Site and Las Vegas facilities. At remote sites this work is provided by the host agency.

The scope of this activity includes, but is not limited to, the following types of equipment: mobile cranes, overhead and gantry cranes, drilling rigs, generators, light plants, compressors, forklifts, and many forms of earth moving equipment, i.e., dozers, scrapers, and front end loaders. Work is performed according to the manufactures' recommendations. Engineering is consulted when equipment modifications are made or a structural defect is suspected.

Equipment is inspected before and after repair work, and as recommended by national guides or manufacturers' recommendations.

The work activity involves:

Preventive Maintenance

Preventive maintenance (PM) performed in the shop or the field. The user reports the hours of use and the PM is performed at intervals recommended by the manufacturer. Repair Inspection is performed upon return from the renters or other users to determine the state of the equipment. Repairs are performed as needed. Upon completion of the repairs the equipment is inspected before being placed on the "ready line" or delivered to the user. The repairs are accomplished to meet the manufacturers' specifications or recommendations.

Some instances a field mechanic is dispatched to the field to repair problems reported through trouble calls. If necessary, the equipment is brought to the shop.

Inspection

Several types of equipment are required by codes to receive an inspection at certain intervals. Mechanical and electrical inspectors do these inspections. Some inspections are on equipment that is not controlled by the fleet and equipment operations. The expertise is just in the department.

Waste Handling and Storage

Waste is generated during the work activity. The waste oil and lead acid batteries are stored and recycled by an offsite vendor. This is coordinated between the generator, Waste Operations, and the department office. Antifreeze is recycled on site and reused.

Purchase and Excess

Equipment, parts, and fuel are purchased using the procedures identified by the Procurement and Accounting/Costing Departments. The disposal of equipment is accomplished through the Property Management procedures.

3. 5.1 *Heavy Equipment Maintenance*

Latest Revision: 7/23/03

Equipment Control

This activity involves tracking equipment location, user, and availability. It also keeps track of accumulated repair cost and repair for the equipment.

Trending & Tracking Maintenance Costs

Ttrending and tracking of preventative maintenance, costs, and cost reclamation.

When this work activity is executed in support of special facilities or activities, such as Hazard Category 2 & 3 Non-reactor Nuclear Facilities, the DAF, Radioactive Waste, etc., those facility/project/activity-specific standards, which affect heavy equipment activities will be applied as appropriate, with any additional costs to be covered by the specific facility/project/activity.

Execution of this work activity requires the interface with and application of other Work Smart Standards work activities and the standards cited therein. Below are the typical WSS work activities for which interfacing is expected. Others will be addressed as needed:

- 1.1.7 - Labor Relations
- 1.3.1 - Procurement
- 1.5.1 - Records Management & Document Control
- 2.4 - Underground Operations
- 2.7.3 - Estimating
- 2.7.4 - Visual Inspection and Quality Control Inspection
- 2.12 - Hazard Assessment
- 2.15 - Hazard Category 2 & 3 Non-reactor Nuclear Facilities
- 3.4 - Facility Maintenance
- 3.6 - Transportation
- 4.1.2 - Fire Protection: Fire Prevention Activities
- 4.2.1 - Occupational Safety & Health Programs: for all safety and health standards
- 4.2.2 - Industrial Hygiene
- 4.4 - Radiation Protection: for all radiation protection standards
- 4.5 - Environmental Protection Program: for all environment standards
- 4.7 - Quality Program: for all nuclear & non-nuclear quality assurance requirements
- B3 List - Devise Assembly Facility

Section 2 - Hazards and Management Issues:

ES&H HAZARDS TO MAINTENANCE PERSONNEL

Hazards associated with the maintenance, repair, and inspection activities are typically the same as those encountered in a comparable industry. Some examples are: handling chemical substances, encounters with physical agents, work at elevations, proximity to rotating equipment, potential release of stored energy, and fire/burns from welding activities.

HAZARDS TO USERS

3. 5.1 Heavy Equipment Maintenance

Latest Revision: 7/23/03

Hazards associated with failure or inadequate operation of this equipment cover a range from minor injuries to multiple fatalities.

MANAGEMENT ISSUES

Recovering maintenance and operations costs for this work activity through the rental rates while maintaining competitive and affordable rates are on going issues.

Budget or schedule impacts may occur due to failure of equipment resulting from improper or lack of maintenance.

Section 3 - Standards:

Standard	Title
29 CFR 1926	Safety and Health Regulations for Construction
<i>Note</i>	<i>The "General Duty Clause", 29 CFR 1910 for general industry operations and 29 CFR 1926 for construction activities if properly applied will mitigate the employee hazards associated with this activity.</i>
30 CFR Part 35	Fire Resistant Hydraulic Fluids
<i>Note</i>	<i>Provides specifications for hydraulic fluids used underground.</i>
30 CFR Part 36	Approval Requirements for Mobile Diesel Powered Underground Transportation Equipment
<i>Note</i>	<i>Provides specifications for the type of diesel powered equipment that can be operated underground.</i>
30 CFR Parts 18	Electrical Motor Driven Mine Equipment and Accessories
<i>Note</i>	<i>Requirements for mine hoists and ancillary equipment.</i>
American National Standards Institute (ANSI)	Applicable Standards
<i>Note</i>	<i>Applicable ANSI standards in addition to those included by reference in the 29 CFR sections (for equipment not covered by the OSHA standards).</i>
American Society of Mechanical Engineers (ASME)	Applicable Standards
<i>Note</i>	
Crane Manufacturers Association of America	Applicable Standards
<i>Note</i>	
Manufacturer's Specifications	Manufacturer's Specifications
<i>Note</i>	<i>Manufacturer's recommendations or engineering specifications (if modifications to the standard vendor product have been made).</i>

3. 5.1 ***Heavy Equipment Maintenance***

Latest Revision: 7/23/03

Society of Automotive Engineers (SAE)

Applicable Standards

Note

Section 4 - Measurement Parameters:

The EMS, which is a computerized management system, allows for tracking and trending:

- Rentals versus equipment on the ready line.
- Cost of maintenance versus the projected equipment life.
- Actual versus scheduled preventive maintenance.

Section 5 - Implementation Considerations:

Tracking maintenance and repair costs is necessary to understand and budget for the actual cost of operations.

The work is performed by skilled and trained mechanics. Inspection before and after the repair is necessary to reduce equipment failures in the field. This is the same type of quality control used in commercial industry.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

None

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

Fleet Maintenance work activities include:

- Inspecting and preparing documents for purchase of new vehicles.
- Inspecting new vehicles and installing license plates, decals, communications radios, service bodies, etc.
- Tracking motor vehicle usage, scheduling, and performing preventive maintenance, e.g., oil and oil filter changes.
- Recycling used oil, oil filters, antifreeze, tires, Freon refrigerants, and batteries.
- Operating a welding and fabrication shop to support maintenance and repair. This shop also supports other organizations as needed and funded.
- Inspecting and reclaiming reusable government property from vehicles to be excessed.
- Operating service stations and fuel delivery trucks for facilities and operations at the NTS.

Section 2 - Hazards and Management Issues:

HAZARDS:

Hazards associated with fleet maintenance are generally those encountered in similar commercial or government fleet maintenance and control operations. Examples of these hazards are working under lifted and blocked vehicles and equipment; flying objects when inflating and repairing multi-piece rim tires; exposures to lead contamination, hydrogen gas, heat and acid; biological hazards; and high voltage from dielectric testing.

MANAGEMENT ISSUES:

Insufficient data is collected on usage, wear and maintenance of vehicles preventing adequate control for customizing maintenance requirements, e.g., oil/oil filter changes, transmission oil changes, gas dispensing meter calibrations, etc.

The restricted availability of Freon may impact the maintenance activities on fleet vehicles. A systematic approach to the replacement of Freon-based systems/processes should be developed.

Section 3 - Standards:

The following standards are used by commercial industry involved in the fleet operations and maintenance activities:

Standard	Title
29 CFR 1910 Subpart (Q)	Welding, Cutting, and Brazing
<i>Note Requirements for welding, cutting, and brazing.</i>	

3. 5.2 *Fleet Maintenance*

Latest Revision: 9/30/96

29 CFR 1910.1001 Asbestos

Note Requirements for asbestos (for brake repair).

29 CFR 1910.106 Flammable Liquids

Note Requirements for flammable and combustible liquids and servicing multi-piece and single piece wheel rims.

29 CFR 1910.177 Servicing Multi-Piece and Single-Piece Rim Wheels

Note Requirements for flammable and combustible liquids and servicing multi-piece and single piece wheel rims.

40 CFR 82 Subpart B Protection of Stratospheric Ozone

Note

48 CFR 1 - 53 Federal Acquisition Regulation System

Note

49 CFR 180, Part E, 401 - 417 Qualification and Maintenance of Cargo Tanks

Note DOT, Research and Special Programs, Hazardous Materials Transportation Regulations 49 CFR 180.401 - 417, Qualification and Maintenance of Cargo Tanks.

Nevada Administrative Code (NAC)
444.850 - 444.8746 Disposal of Hazardous Waste

Note

Nevada Revised Statutes (NRS) 459.400 -
459.600 Disposal of Hazardous Waste

Note

Society of Automotive Engineers (SAE) Applicable Standards

Note

Tire and Rim Manufacturer's Association,
Inc. (TRMA) Recommended Practices for Fleet Operations

Note

49 CFR 382-399 Subchapter B - Federal Motor Carrier Safety Regulations (FMCSR)

Note DOT, Office of Motor Carriers, Federal Motor Carrier Safety Regulations (FMCSR), 49 CFR Parts 382 - 399.

49 CFR 570 Vehicle In Use Inspection Standards

Note 49 CFR 570 is the default maintenance standard.

49 CFR 571 National Highway Traffic Safety Administration, Federal Motor Vehicle
Safety Standards (FMVSS)

3. 5.2 *Fleet Maintenance*

Latest Revision: 9/30/96

Note DOT, National Highway Traffic Safety Administration, Federal Motor Vehicle Safety Standards (FMVSS) 49 CFR Part 571.

Section 4 - Measurement Parameters:

- Ratio of direct (billable) to indirect (overhead) charges for fleet support.
- Cost per mile to operate.
- Vehicle availability (% of time a vehicle is available to be operated in a time period).
- Vehicle utilization (% of Hours/Days operated in a time period of total possible, more relevant to scheduled truck operations but can indicate light duty vehicle usage when combined with mileage).
- Labor flat-rate comparison. (% of work completed within industry standard flat-rate time allowances for routine work).
- Vehicle value retention (% of acquisition cost recovered at sale or excess).

Section 5 - Implementation Considerations:

Most of the standards are implemented. Actions to complete implementation are in progress resulting in minimal impact.

Vehicles and equipment are maintained to manufacturer's recommendations and guides. If these recommendations are not available, the inspection guidance in 49 CFR 570 is used.

Standards are passed down to subcontractors in the procurement process. The selection of commercial vendors to install service bodies includes screening of qualifications. This helps protect DOE from liability under 49 CFR 571.

Qualified facilities need to be established for servicing Commercial Motor Vehicles (CMVs) stationed at Andrews Air Force Base in Maryland and notification generated to all CMV drivers as to who and where the qualified facilities are.

Screens or barriers are installed in vehicles that transport property and equipment as a best management practice for driver and passenger protection.

Implementation of Equipment Management System (EMS) software to collect sufficient data on usage, wear, and maintenance of vehicles is in progress. The system allows trending and validation of the safety and cost effectiveness of increasing service time and mileage intervals.

The following industry guides are also used:

- Alldata Inc., Vehicle Manufacturer's Factory Data Service (Industry guide)

3. 5.2 ***Fleet Maintenance***

Latest Revision: 9/30/96

- American Welding Society (AWS), Welding Codes (as applicable)
- GSA Vehicle Procurement Guidelines and Specifications.
- Kelley Blue Book Auto Market Report of new & used vehicle prices. (Light Duty, Industry guide)
- Mitchell's Parts and Labor Estimating Guide
- Motor's Parts and Time Guide, by Hearst Business Publishing, Inc.
- National Market Reports, Inc. The Older Truck Blue Book, of heavy duty truck prices.
- National Fire Protection Association, Inc.: NFPA 385, Standards for Tank Vehicles for Flammable and Combustible Liquids.
- Society of Automotive Engineers (SAE), recommended practices.
- The Tire and Rim Manufacturer's Association, Inc., recommended practices.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

The present fleet is old and over mileage as defined by the Federal Property Management Regulations (FPMR). Vehicle replacement funding is not available.

The Federal Acquisition Regulations System (FARS) requires purchase of vehicles through GSA. Uncertain delivery times are caused by GSA holding orders from many organizations to make large lot purchases once or twice a year. This has a direct impact on fleet operations for vehicle turnover.

Section 8 - Training:

Fleet maintenance personnel qualifications are certified by the respective unions for the employees. Special training required by regulations are provided for personnel as needed.

Section 9 - Vulnerabilities:

Light duty vehicles garaged in Clark County may be subject to annual emissions testing the same as private vehicles. Presently these vehicles are not tested for emissions. The EPA can inspect vehicles and levy fines for non-compliance to emissions standards.

3. 5.3 *Heavy Truck Maintenance*

Latest Revision: 2/7/05

Section 1 - Work Activity:

Section 2 - Hazards and Management Issues:

Section 3 - Standards:

Standard	Title
<i>Note</i>	

Section 4 - Measurement Parameters:

Section 5 - Implementation Considerations:

Section 6 - Work Environment:

Section 7 - Uncertainties or Issues:

Section 8 - Training:

Section 9 - Vulnerabilities:

Section 1 - Work Activity:

Transportation is the movement of passengers or property, on the premises or in commerce, by commercial motor vehicle. The work activity includes:

- Moving equipment, materials, and people on and off public highways and other transportation support activities. Specific examples are: moving construction equipment and potable/non-potable water; watering roads and work areas; driving snow plows; transporting hazardous materials; delivering fuel; and lubricating construction equipment in the field.
- Providing furniture and office equipment movement teams with specialized trucks and equipment.
- Providing qualified, licensed drivers to support DOE/NV operations.
- Providing Department of Transportation (DOT) "Principle Place-of-Business" record keeping for motor carrier operations and qualifications of drivers.
- Providing third-party driver skills evaluations for Nevada commercial drivers licenses (CDL) for company drivers.
- Providing oversight for applicable transportation regulations.
- Providing management and oversight for the subcontracted NTS shuttle-bus system.
- Evaluating local and regional motor carriers.
- Packaging, shipping, and receiving of equipment, waste, or property. The shipments can be non-hazardous or hazardous.

Section 2 - Hazards and Management Issues:

HAZARDS:

The hazards of this work activity are typical of those found when the work is performed in similar commercial/industrial enterprises. Examples of hazards are ergonomic conditions, exhaust fumes, and hazardous materials, movement of heavy equipment and vehicles.

MANAGEMENT ISSUES:

Management issues are similar to commercial industries involved in public and private transport. Most notable of these are the potential for fines and, for flagrant violations, imprisonment.

Section 3 - Standards:

The standards for this work activity are those applicable to commercial enterprises, operating transportation service companies. DOE contractors operating commercial motor vehicles (CMVs) are private motor carriers

3. 6.a *Transportation (Labs)*

Latest Revision: 8/13/02

involved in intrastate and interstate commerce, and are subject to DOT regulation on public roads. DOE contractors are regulated by DOT if they offer for shipment or receive HAZMAT via common carriers. Because the NTS is a private facility, DOT regulations are not applicable. However, the spirit of the DOT regulations are imposed through training and management practices to assure consistency.

The 49 CFR requirements are meant to apply to transportation in commerce. For transportation which is not in commerce, the contractor is expected to live within the spirit of the DOT regulations, and provide safe transportation (as would an industrial counterpart). Definition of the mechanisms to do this is the responsibility of the contractor.

Standard

Title

10 CFR 71

Packaging and Transportation of Radioactive Material

Note

10 CFR 71

Packaging and Transportation of Radioactive Material

Note

15 CFR 30

Foreign Trade Statistics Regulations

Note

U. S. Department of Commerce, Customs Regulations, 15 CFR Part 30, Foreign Trade Statistics Regulations, for classification of domestic and foreign commodities exported.

15 CFR 30

Foreign Trade Statistics Regulations

Note

U. S. Department of Commerce, Customs Regulations, 15 CFR Part 30, Foreign Trade Statistics Regulations, for classification of domestic and foreign commodities exported.

15 CFR 768-799

U.S. Import Certification and Delivery Verification Procedure

Note

Export Administration Regulations, and the Harmonized Tariff Schedule of the United States.

15 CFR 768-799

U.S. Import Certification and Delivery Verification Procedure

Note

Export Administration Regulations, and the Harmonized Tariff Schedule of the United States.

49 CFR 107 Subpart B

Exemptions

Note

49 CFR 107 Subpart B

Exemptions

Note

49 CFR 107 Subpart G

Registration of Persons Who Offer or Transport Hazardous Materials

Note

49 CFR 107 Subpart G

Registration of Persons Who Offer or Transport Hazardous Materials

Note

3. 6.a *Transportation (Labs)*

Latest Revision: 8/13/02

49 CFR 171-183 Hazardous Materials Transportation Regulations

Note

49 CFR 171-183 Hazardous Materials Transportation Regulations

Note

49 CFR 382, 383, 387, 390-399 Subchapter B - Federal Motor Carrier Safety Regulations (FMCSR)

Note *Added by BCR 1997-004*

Applicable to interstate commerce.

49 CFR 382-399 Subchapter B - Federal Motor Carrier Safety Regulations (FMCSR)

Note *DOT, Office of Motor Carriers, Federal Motor Carrier Safety Regulations (FMCSR) 49 CFR Part 382 - 399.*

Institute for Manufacturers of Explosives Standard 22
(IME) Safety Library Publication No. 22

Note *Added by BCR 1997-004*

IME for transport of explosives and detonators on the same truck (incorporated by reference in 49 CFR 177.835).

Institute for Manufacturers of Explosives Standard 22
(IME) Safety Library Publication No. 22

Note *Added by BCR 1997-004*

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International Air Transport Association Dangerous Goods Regulations
(IATA)

Note *Added by BCR 1997-004*

International Air Transport Association Dangerous Goods Regulations
(IATA)

Note *Added by BCR 1997-004*

International Civil Aviation Organization Flight Regulations and Requirements
(ICAO)

Note *Added by BCR 1997-004*

International Civil Aviation Organization Flight Regulations and Requirements
(ICAO)

Note *Added by BCR 1997-004*

Nevada Revised Statutes (NRS) 483.912 Administration of Driving Skills Test by Person or Agency Other Than
Department; Credit for Passing Test

3. 6.a Transportation (Labs)

Latest Revision: 8/13/02

Note *Added by BCR 1997-004*

Regulations for third party CDL drivers skills examiners.

Nevada Revised Statutes (NRS) 483.912	Administration of Driving Skills Test by Person or Agency Other Than Department; Credit for Passing Test
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Note *Added by BCR 1997-004*

Regulations for third party CDL drivers skills examiners.

Section 4 - Measurement Parameters:

- DOT Motor Carrier Safety Fitness Rating.

- Ratio of accidents per million miles, by company CMVs.

Section 5 - Implementation Considerations:

Management systems to adequately control shipping and receiving at the outlying facilities in California, at the Remote Sensing Laboratory (RSL) on Nellis AFB, at Los Alamos, New Mexico, and at Andrews AFB in Maryland are being implemented.

During an actual nuclear emergency response, Nuclear Emergency Search Teams (NEST) are exempt from regulatory compliance. However, NEST emergency exercises are planned to ensure that all CMV operations are performed within FMCSR and/or HAZMAT compliance, yet retain as much of the emergency operation sense as possible.

Vendor qualification of local commercial repair shops is required to ensure personnel who perform annual safety inspections or inspect, service, or maintain the brakes on CMVs are qualified to the minimum standards of FMCSR Part 396.

The Automated Transportation Management System (ATMS) should be used for transportation reporting and record keeping.

A very specific implementation consideration is the need to assure any bill of lading, airbill, or any other commercial document covering shipments made by or to the contractor on DOE's behalf contain either:

- United States Department of Energy "in care of" the contractor, or
- The contractor "for the United States Department of Energy."

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

National Laboratories and DOE contractors provide their own compliance oversight on the NTS. No mechanism coordinates transportation and compliance activities on the NTS.

3. 6.a ***Transportation (Labs)***

Latest Revision: 8/13/02

The standards identified in this document are intended to ensure compliance for transport in commerce, on the public highways, off the NTS.

Transportation operations are fragmented and decentralized in the judgment of the DOT, when comparing DOE contractor operations to a typical commercial or private motor carrier. For example, DOE contractor CMVs are driven on public highways by different organizational groups, in several states, yet a company-wide system to record and track total mileage of CMVs on public highways is lacking. The ratio CMV accidents to miles traveled is used by DOT to measure carrier safety performance.

Section 8 - Training:

Transportation Managers, Traffic Manager, Drivers and other transportation workers are trained in accordance with the applicable regulations.

Section 9 - Vulnerabilities:

N/A

3. 6.b *Transportation (BN and WSI)*

Latest Revision: 8/14/02

Section 1 - Work Activity:

Transportation includes those activities related to the planning, preparation, and movement of passengers, material, and property by, for, or on behalf of DOE. The work activity includes:

- Transportation of equipment, materials, and people on property owned or controlled by DOE on and off public highways, in interstate, intrastate, or foreign commerce by any mode.
- Performing oversight activities of a company's transportation operations to assure those operations conducted on property under the control of DOE and operations originating on DOE property and extending to commerce comply with applicable requirements.
- Assuring the safety, quality, effectiveness, adequacy, and completeness of packaging, shipping and receiving of all material.
- Assure the BN Fire Protection & Emergency Medical Services is notified of all hazardous materials movements on the Nevada Test Site in accordance with DOE/NV P 460.X "Implementation and Operation of the Hazardous Materials Notification System (HAZTRAK)

Section 2 - Hazards and Management Issues:

The hazards of this work activity include those found when the work is performed by similar commercial entities conducting transportation operations. These include hazards associated with the operation of large commercial motor vehicles, loading and unloading of cargo, movement of over-dimensional or overweight commodities, and the packaging, transportation, and handling of hazardous materials.

MANAGEMENT ISSUES:

Management issues associated with this activity are similar to those found when the work is performed by similar commercial entities conducting transportation operations. Most notable of these issues are the challenges inherent in the uniform application of sufficient management controls for decentralized transportation activities. Sufficient management controls must prevent violations of regulatory requirements and the imposition of civil monetary penalties, as well as possible imprisonment.

Section 3 - Standards:

The standards for this work activity are those applicable to similar commercial entities operating transportation service companies. DOE contractors performing transportation-related activities are subject to federal, state, and local regulation. DOE contractors are regulated by DOT if they offer or receive hazardous materials via commercial or for-hire carriers. Onsite hazardous materials (including nuclear components, Naval nuclear fuel elements, Category I and Category II special nuclear materials, special assemblies, and other materials of national security interest) transfers shall comply with the hazardous materials regulations, or the site- or facility specific cognizant Operations or Field Office approved Transportation Safety Document that describes the methodology and compliance process to meet equivalent safety for any deviation from the hazardous materials regulations. (For offsite shipments, the same requirements apply, however as an alternative for materials covered by 461.1, an offsite transportation certificate or authorization approved by the Manager, Albuquerque Operations Office may be

3. 6.b *Transportation (BN and WSI)*

Latest Revision: 8/14/02

utilized). Industry recognized transportation standards are imposed on all transportation activities to ensure consistent application of these standards and ensure compliance for transportation-related activities

Standard

Title

10 CFR 71

Packaging and Transportation of Radioactive Material

Note

10 CFR 71

Packaging and Transportation of Radioactive Material

Note

10 CFR Part 73

Physical Protection of Plants and Materials

Note

10 CFR Part 73

Physical Protection of Plants and Materials

Note

15 CFR 30

Foreign Trade Statistics Regulations

Note

U.S. Department of Commerce, Customs Regulations, 15 CFR Part 30, Foreign Trade Statistics Regulations, for classification of domestic and foreign commodities exported.

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15 CFR 768-799

U.S. Import Certification and Delivery Verification Procedure

Note

Export Administration Regulations, and the Harmonized Tariff Schedule of the United States.

15 CFR 768-799

U.S. Import Certification and Delivery Verification Procedure

Note

Export Administration Regulations, and the Harmonized Tariff Schedule of the United States.

41 CFR Part 101-40

Federal Property Management Regulations - Transportation and Traffic Management

Note

41 CFR Part 101-40

Federal Property Management Regulations - Transportation and Traffic Management

Note

41 CFR Part 109-40

DOE Property Management Regulations - Transportation and Traffic Management

Note

Added as mandatory federal requirement per BCR-2001-019.

41 CFR Part 109-40

DOE Property Management Regulations - Transportation and Traffic Management

3. 6.b *Transportation (BN and WSI)*

Latest Revision: 8/14/02

Note Added as mandatory federal requirement per BCR-2001-019.

48 CFR Part 47	Transportation
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Note

48 CFR Part 47	Transportation
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Note

49 CFR 171-180	Hazardous Materials Transportation Regulations
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Note Applicable to on-site, interstate, intrastate, and foreign commerce.

49 CFR 171-180	Hazardous Materials Transportation Regulations
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Note Applicable to on-site, interstate, intrastate, and foreign commerce.

49 CFR 382, 383, 387, 390-399	Subchapter B - Federal Motor Carrier Safety Regulations (FMCSR)
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Note Applicable to interstate commerce.

49 CFR 382, 383, 387, 390-399	Subchapter B - Federal Motor Carrier Safety Regulations (FMCSR)
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Note Applicable to interstate commerce.

49 CFR Part 107	Hazardous Materials Program Procedures
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Note Applicable to interstate, intrastate, and foreign commerce.

49 CFR Part 107	Hazardous Materials Program Procedures
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Note Applicable to interstate, intrastate, and foreign commerce.

DOE NV P 460.X	Compliance With Implementation and Operation of the Hazardous Materials Notification System (HAZTRAK)
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Note This Policy applies to hazardous materials transportation operations and activities at the Nevada Test Site (NTS).

DOE O 460.1A, CRD	Packaging and Transportation Safety
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Note Added by BCR 2001-104. The inclusion of this CRD is enacted to meet requirements for safe harbor provisions of 10 CFR 830.

DOE O 460.2, CRD	Departmental Materials Transportation and Packaging Management
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Note Added by BCR 2001-014. The inclusion of this CRD is enacted to meet regulatory and DOE requirements for the consistent and compliant movement of DOE materials.

DOE O 461.1, CRD	Packaging and Transfer, or Transportation of Materials of National Security Interest
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Note Added by BCR 2001-014. The inclusion of this CRD is enacted to meet requirements for safe harbor provisions of 10 CFR 830. DOE O 461.1 replaces canceled DOE Order 5610.12.

3. 6.b *Transportation (BN and WSI)*

Latest Revision: 8/14/02

DOE Order 460.1A Contractor Requirements Document Packaging and Transportation Safety

Note *The inclusion of this CRD is enacted to meet requirements for safe harbor provisions of 10 CFR, 830.*

DOE Order 460.2 Contractor Requirements Document Departmental Materials Transportation and Packaging Management

Note *The inclusion of this CRD is enacted to meet regulatory and DOE requirements for the consistent and compliant movement of DOE materials.*

DOE Order 461.1 Contractor Requirements Document Packaging and Transfer, or Transportation of Materials of National Security Interest

Note *The inclusion of this CRD is enacted to meet requirements for safe harbor provisions of 10 CFR, 830. DOE Order 461.1 replaces canceled DOE Order 5610.12*

Institute for Manufacturers of Explosives (IME) Safety Library Publication No. 22 Standard 22

Note *IME for transport of explosives and detonators on the same truck (incorporated by reference in 49 CFR 177.835.)*

Institute for Manufacturers of Explosives (IME) Safety Library Publication No. 22 Standard 22

Note *IME for transport of explosives and detonators on the same truck (incorporated by reference in 49 CFR 177.835.)*

International Air Transport Association (IATA) Dangerous Goods Regulations

Note

International Air Transport Association (IATA) Dangerous Goods Regulations

Note

International Civil Aviation Organization (ICAO) Flight Regulations and Requirements

Note

International Civil Aviation Organization (ICAO) Flight Regulations and Requirements

Note

Nevada Administrative Code (NAC) Chapter 459 Hazardous Material

Note

Nevada Administrative Code (NAC) Chapter 459 Hazardous Material

Note

3. 6.b *Transportation (BN and WSI)*

Latest Revision: 8/14/02

Nevada Administrative Code (NAC)
Chapter 484

Traffic Laws

Note

Nevada Administrative Code (NAC)
Chapter 484

Traffic Laws

Note

Nevada Administrative Code (NAC)
Chapter 706

Motor Carriers

Note *Added as mandatory federal requirement per BCR-2001-019.*

Nevada Administrative Code (NAC)
Chapter 706

Motor Carriers

Note *Added as mandatory federal requirement per BCR-2001-019.*

Nevada Revised Statutes (NRS) Chapter
484

Traffic Laws

Note

Nevada Revised Statutes (NRS) Chapter
706

Motor Carriers

Note *Applicable to intrastate commerce.*

Nevada Revised Statutes (NRS) Chapter
459

Hazardous Material

Note

Nevada Revised Statutes (NRS) Chapter
459

Hazardous Material

Note

Nevada Revised Statutes (NRS) Chapter
484

Traffic Laws

Note *Added as mandatory federal requirement per BCR-2001-019. Applicable to intrastate commerce.*

Nevada Revised Statutes (NRS) Chapter
706

Motor Carriers

Note *Added as mandatory federal requirement per BCR-2001-019. Applicable to intrastate commerce.*

NV P 460.X

Compliance With Implementation and Operation of the Hazardous Materials Notification System (HAZTRAK)

Note *Added by BCR 2001-014. This Policy applies to hazardous materials transportation operations and activities at the Nevada Test Site (NTS).*

Section 4 - Measurement Parameters:

Traffic Management Performance Measures may include:

- DOT Motor Carrier Safety Fitness Rating.
- Freight tonnage and number of items shipped and received.
- Number and types of errors found on outbound hazardous materials shipments.
- Freight claims performances, by carriers

Section 5 - Implementation Considerations:

Transportation operations are subject to interstate regulations when the movement of property or passengers terminates in a state/province/country/ outside where the movement began.

Interstate transportation standards are applicable to transportation operations involving motor vehicles:

- (1) With a gross vehicle weight rating (GVWR) in excess of 10,000 pounds;
- (2) If towing a trailer, with a gross combined weight rating (GCWR) in excess of 10,000 pounds;
- (3) With an actual gross weight of more than 10,000 pounds;
- (4) Of any size, used to transport a quantity of hazardous materials requiring placarding; or
- (5) Designed to transport more than 15 passengers.

For transportation operations and motor vehicles that are wholly operated in Nevada, the Nevada NRS and NAC transportation regulations are applicable. These intrastate requirements are applicable to transportation operations involving motor vehicles:

- (1) With a gross vehicle weight rating (GVWR) in excess of 26,000 pounds,
- (2) If towing a trailer, with a gross combined weight rating (GCWR) in excess of 26,000 pounds, or
- (3) With an actual gross weight of more than 26,001 pounds.

Management systems to control shipping and receiving, including the outlying DOE/NV facilities in California, at the Remote Sensing Laboratory (RSL) on Nellis AFB, at Los Alamos, New Mexico, and at Andrews AFB in Maryland will be implemented.

Until such time that an Onsite Transportation Safety Document (as required by 460.1A and 461.1) is approved by the Operations Office, an onsite exception to an applicable standard may be requested when an applicable standard or element of the standard poses a significant obstacle to the successful completion of an activity. To obtain an exception a Request for Limited Deviation shall be generated, identifying administrative hazard controls that, when implemented, will provide an equivalent or better level of protection. Contractors and NTS users shall implement a system for submitting Requests for Limited Deviations for approval by the Operations Office

Section 6 - Work Environment:

Office, warehouse, vehicle, and various NTS facilities where packaging, transfer, and transportation operations are conducted.

3. 6.b ***Transportation (BN and WSI)***

Latest Revision: 8/14/02

Section 7 - Uncertainties or Issues:

Issues or impacts as result of new onsite packaging and transportation regulations and orders.

Section 8 - Training:

Each employee involved in transportation related activities will receive training commensurate with their responsibilities. Managers will maximize the use of classes held at Bechtel Nevada facilities.

Section 9 - Vulnerabilities:

Potential violations of Price Anderson Amendment Act provisions if not implemented.

Potential citations by U.S. Department of Transportation for violations of modal hazardous materials regulations.

Potential non-compliance with DOE Headquarters established requirements for on-site transportation operations.

Section 1 - Work Activity:

This work activity is for security services as it relates to the Industrial Security mission for National Nuclear Security Administration/Nevada Site Office not including those activities required to protect Special Nuclear Material (SNM). Services are performed by contractor organizations at the NTS and Las Vegas, Nevada; Special Technologies Laboratory, California; Los Alamos Operations, New Mexico; Remote Sensing Laboratory - Nellis AFB and Andrews AFB; Livermore Operations, California. There are five major areas of security services: General Security, Physical Security, Technical Security, Internal/Personal Security and Security Education and Operations Security (OPSEC).

General Security Services includes:

- Badge services
- Access control
- Facility checks/Security patrols
- Protection of property and security interests
- Searches of vehicle and personnel hand-carry items
- Response to security and fire protection alarms
- Enforce property removal policies and procedures
- Prepare written security station orders
- Escort duties for classified materials/equipment
- Detain personnel, as appropriate
- Monitor alarms and surveillance cameras/equipment in the Primary and
- Secondary Alarm Stations
- Participate in security training exercises (alarm and emergency response)

Physical Security includes:

- Facility and other security plans (including printing) development
- Operating procedures development for physical security
- Performance tests of physical security program
- Investigation of the loss or theft of government property
- Implementation of security lock and key control procedure

Technical Security includes:

- Establishment of technical security standards, programs, and guidelines.
- Classified Computer Security (CCS) Program Unclassified Computer Security (UCS).
- Program Technical Surveillance Countermeasures (TSCM) Program.
- Communications Security (COMSEC) Program engineering guidance for alarm systems and electronic access control systems.

Internal/Personnel Security includes:

3. 7 *Safeguards and Security*

Latest Revision: 11/30/04

- Procedures to protect classified matter
- Visitor Control program
- New-hire and terminating employee security processing
- Classified matter handling education program
- Personnel Security Program (Security clearances)

Security Education and Operations Security (OPSEC) includes:

- Operations Security (OPSEC) program
- Employee Security Education program
- OPSEC assessments
- Administer the OPSEC Waste and Disposal Program
- OPSEC administrative support

The NISCG noted that "armed Security Police Officers" may serve in positions where only unarmed access control personnel are required. Security should be considered as three related but distinct work activities:

a) Safeguards and Security of Special Nuclear Material (SNM). Within the Safeguards and Security of SNM, specific requirements exist for Special Police Officers (SPO) work activities regarding the use of force (including deadly force), physical and mental fitness (Personnel Assurance Program); training including crowd/riot control and tactical methods, and firearms safety. Specific requirements, standards and guidelines have been established for these activities through DOE Orders and local implementing documents (including DOE/NV guidance). Such requirements are for the protection of SNM and the prevention of the theft of SNM and are therefore outside the scope of this activity.

When the SPOs are deployed to work stations where an armed security person is not required, they bring this knowledge with them. The use of force at these work stations may be invoked in rare instances, which are included in the SPO training. A non-SPO security person deployed to the same work station would not be trained in, nor expected to invoke the use of force.

b) Nye County arrest authority only as deputies of Nye County Sheriff (on NTS only). This work activity is somewhat unique in that SPOs have been deputized by the Nye County Sheriff's Office for supporting activities on the NTS. When acting in this capacity, the SPO is acting as an agent of Nye County under the auspices of the Nye County Sheriff.

c) Industrial Security. The work activity described in the N&S is based on commercial and government "industrial security" practices. During the process of identifying the work activity, and attempting to identify alternate (necessary and sufficient) standards for security activities, coordinating was accomplished with other DOE/DoD contractors, DOE field offices, and industrial/commercial organizations.

3. 7 *Safeguards and Security*

Latest Revision: 11/30/04

The hazards and management issues, Section 2.0, and the standards, Section 3.0, are based upon information from these contacts. In an industrial/commercial environment, access control is normally performed by non-armed personnel, e.g., a receptionist.

Section 2 - Hazards and Management Issues:

Hazards:

- Risk of injury resulting from vehicle accidents.
- Risk of injury during training exercises (such as physical conditioning or application of non-lethal force).

Management Issues:

- Failure to protect property and security interests may adversely impact national security or the health and safety (e.g., violence in the workplace, sabotage, etc.) of DOE and contractor employees, the public, or damage the environment. Failure to control access to facilities or security interests may result in compromise of classified or sensitive material.
- Failure to control access to facilities or security interests may result in compromise of classified or sensitive material.
- Computer and data security including unauthorized access, computer/data sabotage and virus protection.

Section 3 - Standards:

The standards for this work activity are the same as those used in commercial industry and other related government security contracts. The requirements necessary to protect Special Nuclear Material are not within the scope of this document.

DOE facilities are protected as approved in site specific facility plans. The local NSO determines the level of protection and protection strategies that are necessary and sufficient. Counterparts at industrial/commercial organizations develop in-house policies (Standard Operating Procedures, etc.), which are risk/threat driven. Manufacturers, wholesalers, retailers, and service businesses tend to place security emphasis on keeping intruders out of the facilities and applying a modicum of entry and circulation controls when allowing announced visitors into their midst.

Standard	Title
10 CFR 860	Trespassing on Department of Energy Property
<i>Note Issued for the protection and security of facilities, installations, and real property subject to the jurisdiction or administration of, or in the custody of DOE.</i>	
Department of Defense (DoD) 5220.22-M	National Industrial Security Program Operating Manual
<i>Note</i>	
NV O 470.X	Intruder Interdiction

3. 7 *Safeguards and Security*

Latest Revision: 11/30/04

Note Added by BCR 90-012, 4/29/99.

State of California Private Security Services Act, Chapter 11.5	Private Security Services
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Note This standard is applicable to California activities only.

DOE O 440.1A, CRD, Attachment 2, Paragraph 21	Motor Vehicle Safety
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Note Reference paragraph corrected by Change Request 2000-009, 08/22/2000.

Executive Order 12829	National Industrial Security Program
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Note This document serves as a single, integrated, cohesive industrial security program to protect classified information and to preserve economic and technical interests. Per DOE/NV, they have not heard of a change in the near future for 10865. Executive Order 12829 states that it is revoking 1A and 1B of Executive Order 10865 as of Jan 6, 1993, though both orders are still currently in existence.

NV N 473.8	SECON IMPLEMENTATION POLICY FOR NNSA/NSO
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Note Added by BCR 2003-003.

DOE O 142.3	Unclassified Foreign Visits and Assignments
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Note This order cancels DOE P 142.1 & DOE N 142.1 which cancelled DOE O 1240.2B. Updated by BCR 2004-020, 9/15/04.

Section 4 - Measurement Parameters:

- Limited Scope Performance Tests.
- Alarm Response.
- Security infraction information.

Section 5 - Implementation Considerations:

The work activity described in Section 1.0 is in support of NNSA/NSO's mission excluding the protection of SNM. The standards in Section 3.0 are currently implemented. There is no impact to security programs.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

Some positions covered under stated standards are staffed by Uniformed Protective Force personnel under a collective bargaining agreement and may be subject to further negotiation.

Currently, because of the availability of the Special Police Officers (SPOs) who are trained in crowd/riot control, they are deployed to provide additional "access control" at demonstrations at the DOE/NV facilities in Las Vegas. As the number of SPOs for the protection of SNM decreases, this capability may disappear. This would require a management decision concerning what level and type of effort that would be required. In an industrial/commercial

3. 7 *Safeguards and Security*

Latest Revision: 11/30/04

environment, this support would be supplied by private security services, by local law enforcement agencies, or by establishing administrative guidelines, e.g., lock the doors, and close-up shop.

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

3. 7.1 *Program Management*

Latest Revision: 11/30/04

Section 1 - Work Activity:

Safeguards and Security Programs are required for any facility that possess special nuclear material, classified matter and also for contractors that have employees that possess access authorizations (personnel security clearances) to access classified information or special nuclear material at other facilities. The Program Management area includes the following elements:

- Program Management and Administration
- Program Planning
- Personnel Development and Training
- Facility Approval and Registration of Activities
- Foreign Ownership, Control or Influence
- Safeguards and Security Plans
- Surveys and Self Assessments
- Incident Reporting and Management

Section 2 - Hazards and Management Issues:

Management Issues:

Failure to protect safeguards and security interests may adversely impact national security or the health and safety (e.g., violence in the workplace, sabotage, etc.) of National Nuclear Security Administration/Nevada Site Office and contractor employees, the public, or damage the environment. Failure to control access to facilities or safeguards and security interests may result in compromise of classified or sensitive information.

Section 3 - Standards:

Standard	Title
10 CFR 706	Security Policies and Practices Relating to Labor Management Relations
<i>Note</i> Added by BCR 2003-004.	
42 USC 2001, et seq.	Atomic Energy Act of 1954
<i>Note</i> Added by BCR 2003-004.	
DoD 5220.22-M	National Industrial Security Program Operating Manual
<i>Note</i> Added by BCR 2003-004.	
DoD 5220.22-M-SUP-1	National Industrial Security Program Operating Manual Supplement
<i>Note</i> Added by BCR 2003-004.	
DOE M 471.2-1C	Classified Matter Protection and Control Manual
<i>Note</i> Added by BCR 2003-004.	

3. 7.1 Program Management

Latest Revision: 11/30/04

DOE O 470.1 Chg 1	Safeguards and Security Program
<i>Note</i> <i>Added by BCR 2003-004.</i>	
DOE O 470.2B	Independent Oversight and Performance Assurance Program
<i>Note</i> <i>Added by BCR 2003-004.</i>	
DOE O 471.2A	Information Security Program
<i>Note</i> <i>Added by BCR 2003-004.</i>	
DOE P 470.1	Integrated Safeguards and Security Management Policy
<i>Note</i> <i>Added by BCR 2003-004.</i>	
EO 12829	National Industrial Security Program
<i>Note</i> <i>Added by BCR 2003-004.</i>	
NSD 47	Counterintelligence and Security Countermeasures
<i>Note</i> <i>Added by BCR 2003-004.</i>	
EO 12958	Classified National Security Information
<i>Note</i> <i>Added by BCR 2003-004.</i>	
DOE O 471.4	Incidents of Security Concern
<i>Note</i> <i>Replaces DOE N 471.3. Updated by BCR 2004-020, 9/15/04.</i>	

Section 4 - Measurement Parameters:

- . NNSA/NSO surveys
- . Headquarters Office of Independent Oversight and Performance Assurance (OA) inspections
- . Performance tests
- . Security incident information

Section 5 - Implementation Considerations:

The standards cited above are currently in use with no impact.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

Requirements for safeguards and security training are contained in the standards identified above.

3. 7.1 *Program Management*

Latest Revision: 11/30/04

Section 9 - Vulnerabilities:

Potential violations of law if not implemented.

Potential damage to national security if not implemented.

Potential non-compliance with national policy and DOE Headquarters established requirements for safeguards and security.

3. 7.2 *Protection Program Operations*

Latest Revision: 11/30/04

Section 1 - Work Activity:

Protection programs protect and control personnel, special nuclear material, classified and unclassified sensitive information, and Government property from unauthorized access, removal, damage, or destruction through the integration of security equipment, procedures, protective forces, management and supervision into a total system using the design basis threat policy and local threat guidance. The Protection Program Operations area includes the following elements:

Physical Security
Security Systems
Protective Force
Security Badges, Credentials, and Shields
Transportation Security

Section 2 - Hazards and Management Issues:

Hazards:

There may be hazards associated with firearms safety and physical fitness of the protective force.

Management Issues:

Failure to protect safeguards and security interests may adversely impact national security or the health and safety (e.g., violence in the workplace, sabotage, etc.) of DOE and contractor employees, the public, or damage the environment. Failure to control access to facilities or safeguards and security interests may result in compromise of classified or sensitive information.

Section 3 - Standards:

Standard	Title
10 CFR 1046	Physical Protection of Security Interests
<i>Note</i> Added by BCR 2003-004.	
10 CFR 1047	Limited Arrest Authority and Use of Force by Protective Force Officers
<i>Note</i> Added by BCR 2003-004.	
10 CFR 706	Security Policies and Practices Relating to Labor Management Relations
<i>Note</i> Added by BCR 2003-004.	
10 CFR 860	Trespassing on Department of Energy Property
<i>Note</i> Added by BCR 2003-004.	
32 CFR 2004	Safeguarding Directive

3. 7.2 *Protection Program Operations*

Latest Revision: 11/30/04

Note Added by BCR 2003-004.

Atomic Energy Act of 1954	as amended
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Note Added by BCR 2003-004.

DoD 5220.22-M	National Industrial Security Program Operating Manual
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Note Added by BCR 2003-004.

DoD 5220.22-M-SUP-1	National Industrial Security Program Operating Manual Supplement
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Note Added by BCR 2003-004.

DOE M 473.2-1A	Firearms Qualification Courses Manual
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Note Added by BCR 2003-004.

DOE M 473.2-2 Chg 1	Protective Force Program Manual
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Note Added by BCR 2003-004.

DOE O 461.1	Packaging and Transfer or Transportation of Materials of National Security Interest
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Note Added by BCR 2003-004.

DOE O 470.1 Chg 1	Safeguards and Security Program
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Note Added by BCR 2003-004.

DOE O 473.2	Protective Force Program
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Note Added by BCR 2003-004.

EO 12829	National Industrial Security Program
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Note Added by BCR 2003-004.

PDD 39	U.S. Policy on Counterterrorism
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Note Added by BCR 2003-004.

PDD 62	Combating Terrorism
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Note Added by BCR 2003-004.

DOE N 473.9	Security Conditions
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Note DOE N 473.8 was cancelled by BCR 2004-020, 9/15/04.

Section 4 - Measurement Parameters:

- . NNSA/NSO surveys
- . Headquarters Office of Independent Oversight and Performance Assurance (OA) inspections

3. 7.2 *Protection Program Operations*

Latest Revision: 11/30/04

- . Performance tests
- . Security incidents that affect the protection and control of personnel.
- . Security incidents of unauthorized access, removal, damage, and destruction to special nuclear material, classified and sensitive unclassified information, and Government property.
- . Periodic Surveys, Self-Assessments, and Program Reviews.

Section 5 - Implementation Considerations:

The standards cited above are currently in use with no impact.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

Requirements for safeguards and security training are contained in the standards identified above.

Section 9 - Vulnerabilities:

- . Potential violations of law if not implemented.
- . Potential damage to national security if not implemented.
- . Potential non-compliance with national policy and DOE Headquarters established requirements for safeguards and security.

3. 7.3 *Information Security*

Latest Revision: 11/30/04

Section 1 - Work Activity:

The Information Security Program will ensure the protection and control of classified and unclassified sensitive information, in all its forms from unauthorized access, removal, damage, or destruction. The Information Security area includes the following elements:

Classified Matter Protection and Control (CMPC)
Special Access Programs and Intelligence Information
Technical Surveillance Countermeasures (TSCM)
Operations Security (OPSEC)

Section 2 - Hazards and Management Issues:

Management Issues:

Failure to protect safeguards and security interests may adversely impact national security. Failure to control access to facilities or safeguards and security interests may result in compromise of classified or sensitive information.

Section 3 - Standards:

Standard	Title
10 CFR 1017 <i>Note</i> Added by BCR 2003-004.	Identification and Protection of UCNI
10 CFR 1044 <i>Note</i> Added by BCR 2003-004.	Security Requirements for Protected Disclosures Under Section 3164 of the National Defense Authorization Act for FY 2000
10 CFR 1045 <i>Note</i> Added by BCR 2003-004.	Nuclear Classification and Declassification
32 CFR 2001 <i>Note</i> Added by BCR 2003-004.	National Security Information
32 CFR 2004 <i>Note</i> Added by BCR 2003-004.	Safeguarding Directive
Atomic Energy Act of 1954 <i>Note</i> Added by BCR 2003-004.	as amended
DCID 1/22 <i>Note</i> Added by BCR 2003-004.	Technical Surveillance Countermeasures

3. 7.3 *Information Security*

Latest Revision: 11/30/04

DoD 5220.22-M	National Industrial Security Program Operating Manual
<i>Note</i> Added by BCR 2003-004.	
DoD 5220.22-M-SUP-1	National Industrial Security Program Operating Manual Supplement
<i>Note</i> Added by BCR 2003-004.	
DOE M 471.1-1 Chg 1	Identification and Protection of Unclassified Controlled Nuclear Information Manual
<i>Note</i> Added by BCR 2003-004.	
DOE M 471.2-1C	Classified Matter Protection and Control Manual
<i>Note</i> Added by BCR 2003-004.	
DOE M 471.2-3A	Special Access Program Policies, Responsibilities, and Procedures
<i>Note</i> Added by BCR 2003-004.	
DOE O 200.1	Information Management Program
<i>Note</i> Added by BCR 2003-004.	
DOE O 471.1A	Identification and Protection of Unclassified Controlled Nuclear Information
<i>Note</i> Added by BCR 2003-004.	
DOE O 471.2A	Information Security Program
<i>Note</i> Added by BCR 2003-004.	
DOE O 5610.2, Chg 1	Control of Weapon Data
<i>Note</i> Added per BCR 2004-006, 4/21/04. Relocated from B2 and B3 Lists.	
EO 12333	United States Intelligence Activities
<i>Note</i> Added by BCR 2003-004.	
EO 12829	National Industrial Security Program
<i>Note</i> Added by BCR 2003-004.	
Freedom of Information Act	
<i>Note</i> Added by BCR 2003-004.	
NSDD 19	Protection of Classified National Security Council and Intelligence Information
<i>Note</i> Added by BCR 2003-004.	
NSDD 298	National Operations Security Program

3. 7.3 *Information Security*

Latest Revision: 11/30/04

Note Added by BCR 2003-004.

Privacy Act of 1974

Note Added by BCR 2003-004.

Technical Surveillance Countermeasures
Procedural Manual

Note Added by BCR 2003-004.

EO 12958 Classified National Security Information

Note Added by BCR 2003-004.

DOE M 452.4-1A Protection of Use Control Vulnerabilities and Designs

Note Changed by BCR 2004-020, 9/15/04.

DOE M 471.2-4 Technical Surveillance Countermeasures

Note Added by BCR 2004-020, 9/15/04.

DOE M 475.1-1A Identifying Classified Information

Note Updated by BCR 2004-020, 9/15/04.

Section 4 - Measurement Parameters:

- . NNSA/NSO surveys
- . Headquarters Office of Independent Oversight and Performance Assurance (OA) inspections
- . Performance tests
- . Number of incidents of unauthorized access, removal, damage, and destruction to classified.
- . Number of incidents of unauthorized access, removal, damage, and destruction to unclassified sensitive information.

Section 5 - Implementation Considerations:

The standards cited above are currently in use with no impact.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

Requirements for safeguards and security training are contained in the standards identified above.

Section 9 - Vulnerabilities:

Potential violations of law if not implemented.

Potential damage to national security if not implemented.

Potential non-compliance with national policy and DOE Headquarters established requirements for safeguards and security.

3. 7.4 *Material Control and Accountability*

Latest Revision: 3/27/03

Section 1 - Work Activity:

The nuclear materials control program shall ensure that nuclear material is protected, is in its assigned location, that any unauthorized removal is detected, and response to anomalies is provided. The materials accounting system shall provide complete, accurate, and auditable records of all nuclear material from receipt through disposition. The Material Control and Accountability area includes the following elements

Basic Requirements
Material Accounting
Material Control

Section 2 - Hazards and Management Issues:

Management Issues:

Failure to protect safeguards and security interests may adversely impact national security or the health and safety (e.g., violence in the workplace, sabotage, etc.) of DOE and contractor employees, the public, or damage the environment.

Section 3 - Standards:

Standard	Title
Atomic Energy Act of 1954	as amended
<i>Note</i> Added by BCR 2003-004.	
DOE M 474.1-1A	Manual for Control and Accountability of Nuclear Materials
<i>Note</i> Added by BCR 2003-004.	
DOE M 474.1-2 Chg 2	Nuclear Materials Management and Safeguards System Reporting and Data Submission
<i>Note</i> Added by BCR 2003-004.	
DOE O 474.1A	Control and Accountability of Nuclear Materials
<i>Note</i> Added by BCR 2003-004.	

Section 4 - Measurement Parameters:

- . NNSA/NV surveys
- . Headquarters Office of Independent Oversight and Performance Assurance (OA) inspections
- . Performance tests
- . Number of theft alarms or anomaly investigations which identify nuclear materials either at risk to theft or missing.
- . Number of missing or incomplete nuclear materials accounting and inventory records which result in the conclusion using GAAPs that DOE cannot be assured that nuclear materials stated to be present are accounted

3. 7.4 ***Material Control and Accountability***

Latest Revision: 3/27/03

for.

Section 5 - Implementation Considerations:

The standards cited above are currently in use with no impact.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

Requirements for safeguards and security training are contained in the standards identified above.

Section 9 - Vulnerabilities:

Potential violations of law if not implement.

Potential damage to national security if not implemented.

Potential non-compliance with national policy and DOE Headquarters established requirements for safeguards and security.

3. 7.5 *Personnel Security*

Latest Revision: 11/30/04

Section 1 - Work Activity:

Personnel Security will ensure that authorization for access to classified matter or special nuclear material is granted only to individuals, who are knowledgeable of their safeguards and security responsibilities, and determined by DOE not to constitute a threat to the common defense and security, where such authorization is clearly consistent with the national security. The Personnel Security area includes the following elements:

- Access Authorization (personnel clearance)
- Security Education Briefings and Awareness
- Control of Visits
- Unclassified Visits and Assignments by Foreign Nationals
- Personnel Assurance Program

Section 2 - Hazards and Management Issues:

Management Issues:

Failure to protect safeguards and security interests may adversely impact national security or the health and safety (e.g., violence in the workplace, sabotage, etc.) of DOE and contractor employees, the public, or damage the environment.

Section 3 - Standards:

Standard	Title
10 CFR 706	Security Policies and Practices Relating to Labor Management Relations
<i>Note</i> Added by BCR 2003-004.	
10 CFR 707	Workplace Substance Abuse Programs at DOE Sites
<i>Note</i> Added by BCR 2003-004.	
10 CFR 709	Polygraph Examination Regulations
<i>Note</i> Added by BCR 2003-004.	
10 CFR 710	Criteria and Procedures for Determining Eligibility for Access to Classified Matter or SNM
<i>Note</i> Added by BCR 2003-004.	
Atomic Energy Act of 1954	as amended
<i>Note</i> Added by BCR 2003-004.	
DoD 5220.22-M	National Industrial Security Program Operating Manual
<i>Note</i> Added by BCR 2003-004.	

3. 7.5 *Personnel Security*

Latest Revision: 11/30/04

DoD 5220.22-M-SUP-1 National Industrial Security Program Operating Manual Supplement

Note Added by BCR 2003-004.

DOE M 360.1B-1 Federal Employee Training Manual

Note Added by BCR 2003-004.

DOE M 470.1-1 Safeguards and Security Awareness Program

Note Added by BCR 2003-004.

DOE M 472.1-1B Personnel Security Program Manual

Note Added by BCR 2003-004.

DOE N 470.2 Reporting Unofficial Foreign Travel

Note Added by BCR 2003-004.

DOE O 551.1B Official Foreign Travel

Note Replaces DOE O 551.1A per BCR 2004-004, 4/21/04

EO 12829 National Industrial Security Program

Note Added by BCR 2003-004.

EO 12968 Access to Classified Information

Note Added by BCR 2003-004.

NSD 63 Single Scope Background Investigation

Note Added by BCR 2003-004.

NSDD 197 Reporting Hostile Contacts and Security Awareness

Note Added by BCR 2003-004.

NSDD 84 Safeguarding National Security Information

Note Added by BCR 2003-004.

PDD/NSC 12 Security Awareness and Reporting of Foreign Contacts

Note Added by BCR 2003-004.

Privacy Act of 1974

Note Added by BCR 2003-004.

10 CFR 712 Human Reliability Program

Note Replaced 10 CFR 711. Added by BCR 2004-020, 9/15/04.

3. 7.5 *Personnel Security*

Latest Revision: 11/30/04

DOE O 470.1 Chg 1 Safeguards and Security Program

Note Updated by BCR 2004-020, 9/15/04.

DOE O 142.3 Unclassified Foreign Visits and Assignments

Note Replaces DOE N 142.1 and DOE P 142.1. Added by BCR 2004-020, 9/15/04.

DOE O 472.1C Personnel Security Activities

Note Updated by BCR 2004-020. Replaces DOE O 472.1B.

Section 4 - Measurement Parameters:

- . NNSA/NSO surveys
- . Headquarters Office of Independent Oversight and Performance Assurance (OA) inspections
- . Performance tests
- . Number of incidents of individuals authorized access to classified matter or special nuclear material who constitute a threat to national security, and/or pose a risk to the health and safety of DOE employees, contractors or the general public.
- . Number of individuals granted access to classified matter or special nuclear material who are not aware of their responsibilities to control and protect these DOE/national security interests.

Section 5 - Implementation Considerations:

The standards cited above are currently in use with no impact.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

Requirements for safeguards and security training are contained in the standards identified above.

Section 9 - Vulnerabilities:

Potential violations of law if not implement.

Potential damage to national security if not implemented.

Potential non-compliance with national policy and DOE Headquarters established requirements for safeguards and security.

3. 7.6 Cyber Security

Latest Revision: 4/21/04

Section 1 - Work Activity:

The Cyber Security program will ensure that information processed on cyber systems is protected against unauthorized disclosure or compromise; that data continues to be an accurate representation of information; that information systems continue to perform correct processing operations; and that information and information systems both remain readily accessible to their authorized users. The Cyber Security area includes the following elements:

Classified Cyber Security
Unclassified Cyber Security

Section 2 - Hazards and Management Issues:

Management Issues:

Failure to protect safeguards and security interests may adversely impact national security or the health and safety (e.g., violence in the workplace, sabotage, etc.) of DOE and contractor employees, the public, or damage the environment. Failure to control access to facilities or safeguards and security interests may result in compromise of classified or sensitive information.

Section 3 - Standards:

Standard	Title
Appendix II to Circular A-130	
<i>Note</i> Added by BCR 2003-004.	
Atomic Energy Act of 1954	as amended
<i>Note</i> Added by BCR 2003-004.	
Computer Fraud and Abuse Act of 1986	
<i>Note</i> Added by BCR 2003-004.	
Computer Security Act of 1987	
<i>Note</i> Added by BCR 2003-004.	
DoD 5220.22-M	National Industrial Security Program Operating Manual
<i>Note</i> Added by BCR 2003-004.	
DoD 5220.22-M-SUP-1	National Industrial Security Program Operating Manual Supplement
<i>Note</i> Added by BCR 2003-004.	
DOE M 471.2-1C	Classified Matter Protection and Control Manual

3. 7.6 Cyber Security

Latest Revision: 4/21/04

Note Added by BCR 2003-004.

DOE M 471.2-2	Classified Information Systems Security Manual
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Note Added by BCR 2003-004.

DOE N 205.3	Password Generation Protection and Use
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Note Added by BCR 2003-004.

DOE N 205.4	Handling Cyber Security Alerts and Advisories and Reporting Cyber Security Incidents
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Note Added by BCR 2003-004.

DOE O 200.1	Information Management Program
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Note Added by BCR 2003-004.

DOE O 205.1	Department of Energy Cyber Security Management Program (03/21/2003)
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Note Added by BCR 2004-006, 4/21/04. Relocated from B3 List.

DOE O 471.2A	Information Security Program
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Note Added by BCR 2003-004.

Electronic Communications Privacy Act of 1986	
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Note Added by BCR 2003-004.

EO 12829	National Industrial Security Program
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Note Added by BCR 2003-004.

Government Paperwork Elimination Act	
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Note Added by BCR 2003-004.

Information Technology Management Reform Act - ITMRA	
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Note Added by BCR 2003-004.

NIST 1000	
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Note Added by BCR 2003-004.

OMB Circular A-13	
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Note Added by BCR 2003-004.

OMB Memorandum for the Heads of Departments and Agencies	Dated 2/2000
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3. 7.6 *Cyber Security*

Latest Revision: 4/21/04

Note Added by BCR 2003-004.

PDD 63	Protecting America's Critical Infrastructures
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Note Added by BCR 2003-004.

Privacy Act of 1974

Note Added by BCR 2003-004.

EO 12958	Classified National Security Information
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Note Added by BCR 2003-004.

EO 13010	Critical Information Protection
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Note Added by BCR 2003-004.

EO 13011	Federal Information Technology
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Note Added by BCR 2003-004.

EO 13064	Amendment to EO 13010, Critical Information Protection
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Note Added by BCR 2003-004.

EO 13103	Computer Software Piracy
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Note Added by BCR 2003-004.

EO 13111	Using Technology to Improve Training Opportunities for Federal Government Employees
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Note Added by BCR 2003-004.

EO 13130	National Infrastructure Assurance Council
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Note Added by BCR 2003-004.

Section 4 - Measurement Parameters:

- . NNSA/NV surveys
- . Headquarters Office of Independent Oversight and Performance Assurance (OA) inspections
- . Performance tests
- . Incidents of security concern involving cyber systems.

Section 5 - Implementation Considerations:

The standards cited above are currently in use with no impact.

Section 6 - Work Environment:

N/A

3. 7.6 *Cyber Security*

Latest Revision: 4/21/04

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

Requirements for safeguards and security training are contained in the standards identified above.

Section 9 - Vulnerabilities:

Potential violations of law if not implement.

Potential damage to national security if not implemented.

Potential non-compliance with national policy and DOE Headquarters established requirements for safeguards and security.

Section 1 - Work Activity:

The NTS Power System is a utility supplying electric power at voltage levels required. The transmission voltage levels of the NTS Power System are 138KV and 69KV. Distribution voltage levels are 34.5KV, 12.5KV, and 4.16KV. The scheduled work activity for operators of the electric power system is 24 hours per day, seven days per week. The scheduled activity for maintenance personnel of the electric power system is 10 hours per day, 4 days per week. Maintenance is performed by craftsmen titled High Voltage Electrical Mechanics, High Voltage Line Mechanics and Industrial Control Wiremen. Substations, transmission lines and distribution lines are maintained through inspections, preventive maintenance, and emergency repair. Work is scheduled by using a work package and trouble call system.

NTS power dispatchers are responsible for the operation of the electric power system on an around-the-clock basis.

Section 2 - Hazards and Management Issues:

Hazards to operation and maintenance craftsmen include working at elevated heights, working near energized conductors and equipment, and working with mechanical equipment required for performance of maintenance and operation. These hazards are typical of work conducted in similar industries.

Section 3 - Standards:

The latest version/edition of the listed standard are used unless otherwise specified by the authority having jurisdiction.

Standard	Title
29 CFR 1910.269	Electric Power Generation, Transmission And Distribution
<i>Note Provides basic standards for lock-out and tag-out procedures.</i>	
29 CFR 1926 Subpart V, Sections 950-960	Power Transmission and Distribution
<i>Note Requirements for construction of transmission lines and equipment.</i>	
Institute of Electrical and Electronic Engineers (IEEE)	Applicable Standards
<i>Note IEEE Standards for Engineering in Safety, Maintainability and Operability of Lines (ESMOL) - Suite of 9 standards.</i>	
Institute of Electrical and Electronic Engineers (IEEE) Standards Collection (C57)	Distribution, Power and Regulating Transformers
<i>Note IEEE Standards Collection (C57), Distribution, Power and Regulating Transformers - Suite of 64 standards.</i>	
ANSI C2	American National Standards Institute on Safety (NESC)
<i>Note Updated by BCR 2004-026, 9/15/04. Applicable to electrical utilities design and work.</i>	

3. 8.1 ***Power***

Latest Revision: 11/30/04

Section 4 - Measurement Parameters:

- Availability of electric utility service vs. specified service.

- Delivered cost of power.

- Preventive Maintenance Past Due.

- Unscheduled repairs due to equipment malfunction.

Section 5 - Implementation Considerations:

The standards cited above are currently in use with no impact.

Work on the NTS Power System is strictly controlled by NTS Power Dispatchers, using centrally controlled lock-out tag-out procedures.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

Operation and maintenance personnel qualifications are certified by the respective unions for the employees.

Section 9 - Vulnerabilities:

N/A

3. 8.2 *Water and Steam*

Latest Revision: 1/26/05

Section 1 - Work Activity:

This work activity describes the work at the NTS. Water and Steam systems are operated and maintained to supply public drinking water, to support non-potable water demands, (e.g., construction work) and steam for building heating and process work. The demand for this work activity is continuous, i.e., twenty four hours per day and seven days per week. Supply of potable/non-potable water and steam consists of maintaining systems that provide adequate pressure and water quality. The source of the water at the NTS is ground water.

· Operations: The work activity includes continuous operation of water wells, booster pumps, chlorinators, distribution and transmission pipelines, storage tanks, construction water sumps, water treatment facilities, steam boilers and water treatment of boiler water.

· Maintenance: Maintenance consists of preventive, and corrective maintenance of water wells, booster pumps, chlorinators, distribution and transmission pipelines, storage tanks, construction water sumps, water treatment facilities and steam boilers.

Section 2 - Hazards and Management Issues:

Hazards of the work activity include handling different forms of chlorine and combustible fuels, working with large pumping equipment, electrical equipment, hot surfaces, and repairing underground pipelines, which are typical of those encountered in general industry.

Section 3 - Standards:

The Necessary and Sufficient standards consist of the following:

Standard	Title
Nevada Administrative Code (NAC) 445 A	Water Controls
<i>Note As applicable to the NTS Public Water Systems. Added by BCR 2004-039, 1/19/05.</i>	
<hr/>	
Nevada Administrative Code (NAC) 618.010 - 618.334	Occupational Safety and Health
<i>Note As applicable to NTS oil-fired boilers. Added by BCR 2004-039, 1/19/05.</i>	
<hr/>	

Section 4 - Measurement Parameters:

Availability of water and steam service vs. specified service.

Cost of water and steam service.

Maintenance backlog.

Preventive maintenance conducted vs. repair.

3. 8.2 *Water and Steam*

Latest Revision: 1/26/05

Section 5 - Implementation Considerations:

The standards cited above are currently in use with no impact.

Industry guides and recommendations for use in the operations and maintenance of the water and steam systems are:

- American Water Works Association Standards (Guide).
- National Electric Code.
- Manufacturer's recommendations for the operation and maintenance of the system and components.

Inspections are conducted in accordance with WBS 2.7.4, Visual Inspections and Quality Control Inspections. Maintenance and repair work is performed in accordance with WBS 3.4, Facility Maintenance.

Water and Steam systems are operated by craftsmen of the International Union of Operating Engineers. These craftsmen also operate the steam boilers at the NTS. Water Systems are maintained by craftsmen of the International Brotherhood of Electrical Workers, and the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada as well as other support craft as needed.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

Water softeners are not currently operated at the NTS. Employee training may be necessary if water softening is required.

Section 8 - Training:

Operation and maintenance personnel qualifications are certified by the respective unions for the employees.

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

There are ten separate active sewage collection and treatment systems on the NTS. Biological treatment is accomplished by use of lagoons and disposal is achieved via evaporation and infiltration to the subsurface soils. Sewage received can be generated from domestic and industrial sources that can not contain hazardous waste nor adversely affect the operation of the treatment lagoons. BN Solid Waste Operations will maintain a list of active septic tanks.

The major activities associated with sewage collection and treatment at the NTS are categorized into the following eight areas:

- Operate sewage lagoons to attain proper treatment and disposal.
- Clean, inspect and repair the collection system on a regular basis to prevent blockages and possible surface discharges in any part of the sewage system, which includes permit required confined spaces.
- Maintain structural integrity and design of the lagoon embankments.
- Perform required monitoring and sampling.
- Prepare monitoring reports and correspondence on compliance issues.
- Evaluate proposed discharges of liquid wastes to the sewage collection systems.
- Obtain approvals for additions and modifications to the wastewater systems.
- Conduct investigations and propose construction projects to achieve compliance with regulations.

Section 2 - Hazards and Management Issues:

Hazards encountered in the operation and maintenance of sewage collection and treatment systems are similar to this industry and include: heavy equipment accidents when maintaining the structural integrity and design of the lagoon embankments; fire hazards associated with entry to explosive or flammable atmospheres in the confined spaces; electrical shock from working on energized equipment, such as pumps, lights, etc.; illness or fatalities when entering toxic atmospheres in confined spaces; and illness from water borne diseases, and handling toxicants and pollutants from the sewage system.

Management issues include development of acceptable solutions for compliance with environmental requirements. Solutions to attain environmental compliance must be feasible and cost effective for each site.

Section 3 - Standards:

The state statutes and regulations control discharges of pollutants from sources to waters of the state or to any type of treatment facility. They apply to sewage collection and treatment facilities on the Nevada Test Site since facilities have a potential to discharge to the ground waters of the state. The following standards are considered necessary and sufficient for sewage collection and treatment:

3. 8.3 Sewer

Latest Revision: 1/26/05

Standard

Title

29 CFR 1910.132

Personal Protective Equipment, General Requirements

Note

29 CFR 1910.141, .146, .147, and .151

Sanitation; Permit - Required Confined Spaces; The Control of Hazardous Energy; Medical Service and First Aid

Note Requirements for the sanitation work.

29 CFR 1926 Subpart O

Motor Vehicles, Mechanized Equipment, and Marine Operations

Note 29 CFR 1910 and applicable part of Subparts O and W of 1926 for general hazards.

29 CFR 1926 Subpart W

Rollover Protection Structures; Overhead Protection

Note 29 CFR 1910 and applicable part of Subparts O and W of 1926 for general hazards.

Nevada Administrative Code (NAC)

Sewage Disposal

444.750 - 444.840

Note The state statutes and regulations control discharges of pollutants from sources to waters of the state or to any type of treatment facility. They apply to sewage collection and treatment facilities on the Nevada Test Site since facilities have a potential to discharge to the groundwaters of the state.

Nevada Administrative Code (NAC)

Water Pollution Controls

445A.070 - 445A.348

Note The state statutes and regulations control discharges of pollutants from sources to waters of the state or to any type of treatment facility. They apply to sewage collection and treatment facilities on the Nevada Test Site since facilities have a potential to discharge to the groundwaters of the state.

Nevada Revised Statutes (NRS) 445.131 -
445.354

Water Pollution Control

Note The state statutes and regulations control discharges of pollutants from sources to waters of the state or to any type of treatment facility. They apply to sewage collection and treatment facilities on the Nevada Test Site since facilities have a potential to discharge to the groundwaters of the state.

Section 4 - Measurement Parameters:

Findings of Alleged Violations from the State Regulatory agency.

Compliance with the permits.

Section 5 - Implementation Considerations:

Implementation of these standards are needed to comply with the state of Nevada water pollution control laws and regulations. These laws and regulations require a permit for operation of sewage treatment facilities and reporting of changes to the sewage systems.

The state has issued general permit GNEV93001 to authorize the discharge of sewage into properly designed and maintained impoundments and requires regular sampling and monitoring of the 10 active facilities. It also requires operation in accordance to an approved Operation & Maintenance Manual and implementation of an acceptable

3. 8.3 ***Sewer***

Latest Revision: 1/26/05

method of groundwater protection at each active treatment site.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

Standards require a Certified Grade 1 Wastewater Treatment Plant Operator to be in responsible and in charge of three existing treatment sites.

Section 9 - Vulnerabilities:

Failure to comply with the standards and operating permit requirements will result in state enforcement actions and fines.

Section 1 - Work Activity:

Telecommunications services involve the following activities:

- Provide telephone services for DOE operations in Nevada and Amador Valley Operations for official government business which includes receiving and processing customer requests; tracking and billing charges to the customer; procuring and issuing cellular phones; processing requests with other vendors, e.g., AT&T; and planning/budgeting expansions and upgrades.
- Provide secure and unsecured communications support (i.e., narrative, data, facsimile, voice, and video) to DOE/NV and other clients at Nevada operations, which includes transmitting and receiving messages; providing secure telephone units; coordinating video conferencing; and Data Encryption Standard key loader support.
- Provide a fractional T1 (high speed communications) network for nation-wide, fractional T1 Metropolitan network, and an asynchronous transfer mode telecommunications infrastructure. The networks are monitored through on-line, real time software which reports alarms and troubles within the network for any of its links or nodes.

Section 2 - Hazards and Management Issues:

Hazards for this work activity are typical of general industry.

Management Issues:

- Replacement or upgrade components must meet the industry standards to ensure plug compatibility.
- Hazards associated with Secure Communications operations are loss of secure communications links which could result in a compromise of classified information.
- Federal telephone user fraud, misuse and abuse.

Section 3 - Standards:

The standards identified are those used by general industry and/or other federal agencies for this work activity. The Necessary and Sufficient standards are:

Standard	Title
29 CFR 1910.268	Telecommunications
<i>Note Requirements for telecommunications work.</i>	
<hr/>	
Automated Digital Network (Autodin) Operating Procedures	Joint Army, Navy, and Air Force Publication
<i>Note</i>	
<hr/>	
Bell Telephone Standards	Maintenance, Installation and Operation

3. 9 *Telecommunications*

Latest Revision: 9/30/96

Note

General Services Administration (GSA) Federal Information Resources Management Regulation (FIRMR 101.35)	Applicable Standards
--	----------------------

Note *Requirements for government and government contractors for telephone fraud, misuse and abuse. (See notes regarding FIRMR in WBS 1.4, Information Services)*

National Telecommunications and Information Administration (NTIA)	Manual Of Regulations And Procedures For Federal Radio Frequency Management
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Note

Security Telecommunications and Information Systems Security Publications	Allied Communications Publications, Joint Army Navy Air Force Publication (Automated Digital Network (Autodin) Operating Procedures), and Department of Energy Publications
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Note *These are miscellaneous publications from the various agencies listed under the title of this standard.*

Section 4 - Measurement Parameters:

- Cost of service.
- Video conferences setup schedule vs. number requested.
- Availability of T1 links.
- Mean Time Between Failures.
- Mean Time To Repair.

Section 5 - Implementation Considerations:

The standards cited above are currently in use with no impact.

Because there are many manufacturers/vendors of comparable equipment, selected brand names and software systems are purchased to minimize the number of systems/interfaces which the network operations staff are required to know, operate and maintain.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

Communications Center personnel are required to satisfactorily complete the COMSEC Distribution and Accounting workshop conducted by USDOE Headquarters every four years.

3. 9 *Telecommunications*

Latest Revision: 9/30/96

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

Materials Testing includes destructive and nondestructive testing of materials and equipment. This includes testing for physical, mechanical, hydrologic, chemical, thermal, etc., properties. Test materials include rock, soil, concrete, cements, grouts, steel, nuts, bolts, wire ropes, composite materials, foam, and cables. Testing includes field quality assurance tests for construction and soil and rock coring for foundation evaluations.

Nondestructive evaluations (NDE) and testing are conducted to identify discontinuities in materials without impairing the usefulness or longevity of the material. NDE tests include visual observations, magnetic particle methods, ultrasonic testing, liquid penetrant testing, x-ray evaluations, leak testing and dielectric testing. Dielectric testing is conducted on aerial boom trucks to verify the insulation resistance to ground.

Test work is conducted in the laboratory, construction locations, and underground. Test work is initiated by the NTS project managers, site services, and supports the construction department. The test and evaluation reports are sent to the work requesters and the tested samples will be disposed of as directed.

Section 2 - Hazards and Management Issues:

Hazards: materials testing operations involve equipment operations and chemicals and affect personal safety.

For test work, exposure to high winds and poor visibility conditions create a potential fall hazard while working on the elevated platforms and cranes.

Management Issues: If tests are not conducted per the national standards, the test results can not be repeated and errors can occur in the test data and results. Unreliable test data may effect the stability or quality of the item in which the tested materials were used.

Section 3 - Standards:

Management issues are mitigated using national standards or special procedures identified by the client. In the absence of client specified standards, the following standards are used:

Standard	Title
29 CFR 1910.1450	Occupational Exposure to Hazardous Chemicals in Laboratories
Note	
29 CFR 1926	Safety and Health Regulations for Construction
Note	
49 CFR 106-177	Chapter I - Research and Special Programs Administration Department: Subchapter A - Hazardous Materials Transportation, Oil Transportation, and Pipeline Safety

Note *Management issues are mitigated using national standards or special procedures identified by the client. In the absence of client specified standards, the following standards are used: U.S. Department of Transportation (DOT) 49 CFR 106 through 177 regulations for radiation equipment transportation and safety related testing.*

3.10.1 Materials Testing

Latest Revision: 9/30/96

American National Standards Institute
(ANSI)

Applicable Standards

Note Management issues are mitigated using national standards or special procedures identified by the client.

American Petroleum Institute (API)

Applicable Standards

Note Management issues are mitigated using national standards or special procedures identified by the client. In the absence of client specified standards, the following standards are used: American Petroleum Institute (API) procedures for the drilling mud materials physical properties testing and also rock testing.

American Society for Testing and Materials
(ASTM)

Applicable Standards

Note Management issues are mitigated using national standards or special procedures identified by the client. In the absence of client specified standards, the following standards are used: American Society for Testing and Materials (ASTM) procedures and specifications are for test work such as concrete, soil, aggregate, rocks, steel, nuts, bolts, etc.

American Society of Mechanical Engineers
(ASME)

Applicable Standards

Note Management issues are mitigated using national standards or special procedures identified by the client. In the absence of client specified standards, the following standards are used: American Society of Mechanical Engineers (ASME) standards for material specifications and acceptance standards for physical properties and NDE.

American Welding Society (AWS)

Applicable Standards

Note Management issues are mitigated using national standards or special procedures identified by the client. In the absence of client specified standards, the following standards are used: American Welding Society (AWS) standards for sample preparations, testing and NDE activities

Nevada Department of Transportation
(NDOT)

As specified in the note

Note Management issues are mitigated using national standards or special procedures identified by the client. In the absence of client specified standards, the following standards are used: Applicable Nevada Highway test standards and procedures for testing road construction projects.

Society of Automotive Engineers (SAE)

Applicable Standards

Note Management issues are mitigated using national standards or special procedures identified by the client. In the absence of client specified standards, the following standards are used: Society of Automotive Engineers (SAE) standards for testing and specifications of fasteners and product test procedures.

Section 4 - Measurement Parameters:

- Test data quality.
- Test reports delivery on schedule.
- Cost per test.

Section 5 - Implementation Considerations:

The necessary and sufficient standards are currently in use. There will be no cost to implement.

3.10.1 Materials Testing

Latest Revision: 9/30/96

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

Personnel are trained by the test equipment manufacturers for safe operations. materials testing personnel are also trained and certified per the American Concrete Institute and American Society for Nondestructive Testing.

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

Scientific services are provided to DOE contractors at the NTS; Las Vegas, Nevada; Amador Valley Operations and Special Technology Laboratory, California; Los Alamos Operations, New Mexico; and Washington Aerial Measurements Operations, Andrews AFB, Maryland. Work is initiated by customer request and performed in the laboratory and the field with some work underground as required. Field work requires transporting measuring and characterization equipment to the experiment locations.

Services include:

- Standards and Calibration
- Transducer Calibration and Characterizations
- Fabrication of fiber arrays and hybrid electronic circuits
- Installation of fiber systems
- Operation of optical measuring devices and lasers
- Production, calibration, and design of electro-optic devices, radiation detectors, and diagnostic recording systems for field events
- Electronic and optical technologies for reading and analyzing data from event film
- Characterization of optical modulators

Work will be performed to customer requirements. If none are specified, the default standards will be drawn from this list which represents common industrial practice.

Section 2 - Hazards and Management Issues:

Hazards:

The hazards to employees and the environment are similar to commercial industries performing like-work, such as low voltages and low intensity radiation associated with testing equipment and lasers.

Management Issues:

There is a risk of losing data during tests or experiments where there is only one opportunity to record the results.

Section 3 - Standards:

Work will be performed to customer requirements. If none are specified, the default standards will be drawn from the following list which represents common industrial practice:

Standard**Title**

American National Standards Institute
(ANSI)

Applicable Standards

Note *ANSI Standards for product specifications, acceptance criterion, laser safety requirements, laser utilization guidelines, radiation measurements, and calibration of radiation sources and instruments.*

American National Standards Institute
(ANSI) Z136.1

Safe Use of Lasers

Note

American Society for Testing and Materials
(ASTM)

Applicable Standards

Note *American Society for Testing and Materials (ASTM) procedures and specifications used in test work such as steel nuts, bolts, etc., test, and radiation measurements.*

American Society of Mechanical Engineers
(ASME)

Applicable Standards

Note *American Society of Mechanical Engineers (ASME) standards used for material specifications and acceptance standards for physical properties.*

Institute of Electrical and Electronic
Engineers (IEEE)

Applicable Standards

Note *Institute of Electrical and Electronic Engineers (IEEE), applicable portions used for design, testing, qualifications, and interface requirements.*

Society of Automotive Engineers (SAE)

Applicable Standards

Note *Society of Automotive Engineers (SAE) standards used in testing and specifications of fasteners and product test procedures.*

Section 4 - Measurement Parameters:

- Test data quality.
- Test report delivery time.
- Test Cost.

Section 5 - Implementation Considerations:

The standards are in use with no impact.

Adherence to national standards and commercial industry practices is assured by monitoring laboratory activities and inspecting vendor supplied products.

Section 6 - Work Environment:

N/A

3.10.2 ***Scientific Services***

Latest Revision: 9/30/96

Section 7 - Uncertainties or Issues:

Under the weapons program, the Sandia Primary Standards Laboratory in Albuquerque, NM, calibrates most of the measuring and test equipment standards for the Calibration Laboratory at no cost. This service may no longer be provided if the DOE Albuquerque directives are discontinued and could result in added costs.

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

The work activity is divided into three categories; image acquisition, image processing and image distribution. These activities are the same for both the photographic and video processes.

Image Acquisition

This activity involves the use of video or photographic equipment to capture either moving or still images. Specifically, the activities are:

- Video image acquisition
- Aerial image acquisition (photographic and video)
- Still photography acquisition
- Electronic (digital) photography acquisition
- Scientific instrument image data acquisition
- Customer defined image acquisition
- Created image acquisition

Image Processing

Once an image is acquired, it is processed into a final product which is delivered to the customer and/or archived for later use. Processing includes:

- Video editing
- Video duplication
- Chemical film processing (photographic film and paper)
- Computer enhancement and manipulation (electronic scanning and printing)

Image Distribution

The completed products are delivered to customers and/or archived for later use. Distribution includes:

- Customer viewing
- Packing and shipping of materials to customers
- Hand delivery of materials to customers

- Customer pickup of materials
- Electronic distribution of materials (computer networks)
- Long-term archiving and storage of finished products and original image acquisition materials.

Section 2 - Hazards and Management Issues:

The hazards are typical of dark rooms, such as handling of photographic chemicals, fumes, slips, trips, and falls.

There are no exceptional hazards that are not covered under current OSHA or industry standards.

Management Issues:

If images are not acquired or images are of substandard quality, or not processed in accordance with internal or industry standards, and within customer requirements, the customer may be dissatisfied with the final product. This may result in a negative impression or perception of the company. There may also be a negative financial impact if images need to be reacquired, reprocessed and/or redistributed to satisfy customer requirements.

Section 3 - Standards:

Gathering, processing and distributing images is considered a creative endeavor as well as a technical one. There are no specific standards for creativity in the industry. Formal education and experience comprise a "skill of the craft" standard. Technically, industry standards are applicable and commonly used. Work activity and production standards are determined by internal standards, customer defined requirements, Federal OSHA requirements and local government regulations. In addition, this work activity will also be governed by other applicable program requirements developed through other WBS elements.

General industry standards applied include:

Standard

Title

29 CFR 1910.1200

Hazard Communication

Note

United States Geological Survey (USGS)

Camera Lens Standards For Aerial Vertical Photography Used For Aerial Mapping Purposes

Note

Gathering, processing and distributing images is considered a creative endeavor as well as a technical one. There are no specific standards for creativity in the industry. Formal education and experience comprise a "skill of the craft" standard. Technically, industry standards are applicable and commonly used. Work activity and production standards are determined by internal standards, customer defined requirements, Federal OSHA requirements and local government regulations. In addition, this work activity will also be governed by other applicable program requirements developed through other WBS elements.

Section 4 - Measurement Parameters:

Recommended measurement parameters are:

- Product delivery time as determined by the customer.
- Completion of work achieved in accordance with estimated budget.
- Customer feedback.

Section 5 - Implementation Considerations:

The industry and governmental standards cited in Section 3.0 are already followed. All products produced will be in accordance with industry guidelines for technical quality. This will help ensure the avoidance of management issues that could have a negative impact. There is no impact for implementation.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

3.10.4 *Radiochemical*

Latest Revision: 1/26/05

Section 1 - Work Activity:

The radiochemical lab was closed in 2002 and this Format 1 is no longer required. This WBS was deleted per BCR 2004-028, 1/19/05.

Section 2 - Hazards and Management Issues:

Section 3 - Standards:

Standard	Title
<i>Note</i>	

Section 4 - Measurement Parameters:

Section 5 - Implementation Considerations:

Section 6 - Work Environment:

Section 7 - Uncertainties or Issues:

Section 8 - Training:

Section 9 - Vulnerabilities:

Section 1 - Work Activity:

Custodial services are provided for the DOE/Nevada operations. Custodial services are provided by the host facility at the remote sites. This work activity only includes work at the NTS. Custodial services are also provided for tours, special projects, and Yucca Mountain Project offices. Custodial service activities for the Nevada locations are similar to commercial custodial services and include management and planning for custodial services and subcontractor oversight which requires constant review of management practices. Success rests in the ability to apply modern techniques to technical and management problems.

The types of facilities serviced at the NTS are offices, laboratories, medical facilities, warehouses, workshops, interior public areas, and front of the house dining commons.

The types of services available are vacuuming, sweeping, mopping, stripping and waxing floors, shampooing, buffing, cleaning toilets and fixtures, window cleaning, dusting, washing walls, emptying waste baskets, sanitizing and hantavirus cleanup.

Section 2 - Hazards and Management Issues:

Hazards to custodial services personnel include blood borne pathogens, hazardous chemicals, lifting, slip-trip-fall, etc. A potential for exposure to Hantavirus exists at the NTS.

Section 3 - Standards:

Risks to workers of the work activity can be mitigated by complying with:

Standard	Title
29 CFR 1910.1030	Blood Borne Pathogens
<i>Note Requirements for mitigation of blood borne pathogens (as implemented through WBS 4.2.2, Industrial Hygiene).</i>	
29 CFR 1910.132	Personal Protective Equipment, General Requirements
<i>Note</i>	
Center for Disease Control and Prevention (CDC)	Hantavirus Infection - Southwestern United States: Interim Recommendations for Risk Reduction
<i>Note CDC's, "Hantavirus Infection - Southwestern United States: Interim Recommendation for Risk Reduction" (as implemented in WBS 4.2.2).</i>	

Section 4 - Measurement Parameters:

- Amount of Square Feet Cleaned per Custodial Service Full Time Equivalent (FTE).
- Number of Performance Based Safety Process (PBSP) observations compared to the injuries/illnesses.
- Customer satisfaction surveys.

Section 5 - Implementation Considerations:

The principal hazard in custodial services is the potential improper application or use of cleaning compounds. Custodial service safety is maintained through the continual reiteration of safe work methods, proper application and use of cleaning compounds. The adoption of the PBSP provides for a peer oversight method which focuses on safe work methods and foreseeing unsafe work situations. The staff is trained and certified in the fundamentals of the PBSP.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

Training and certification of Custodial Services managers and employees in the PBSP principals is required to ensure a high quality of protection of the custodial customers and staff.

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

Explosive storage magazines are made available to NTS users, e.g., National Laboratories, Department of Defense, and other groups. All magazines are assigned to the user through a facility use permit program. This work activity is for operations, storage, and inventory:

- Operations includes off loading and loading of explosives.
 - Storage includes the storing of explosives.
- Inventory includes the monitoring and inventory of explosives.

Section 2 - Hazards and Management Issues:

HAZARDS:

If the contents were to explode, the hazards associated with the detonation are blast pressure, primary and secondary fragments, and thermal and chemical effects. These hazards are the same as those in the commercial explosives industry.

MANAGEMENT ISSUES:

Industry has found explosives storage magazines to be a target for break-in. Due to the high liability factor and negative publicity, management issues relate to the security and physical protection of explosive magazines.

Section 3 - Standards:

The necessary and sufficient standards are:

Standard	Title
29 CFR 1910.109	Explosives And Blasting Agents For General Work
Note	<i>29 CFR 1910.109, Explosives And Blasting Agents For General Work - except for 1910.109 (d) (1) (iv) which prohibits transportation of blasting caps and explosives over the highway on the same vehicle.</i>
29 CFR 1926 Subpart U	Blasting and Use of Explosives
Note	<i>Applicable parts of 29 CFR 1926, Subpart U, Blasting And Use Of Explosives, for construction work - except for 1926.902(d) which prohibits transportation of blasting caps and explosives on the same vehicle.</i>
DOE M 440.1-1	DOE Explosives Safety Manual
Note	<i>Added by BCR 2002-022.</i> <i>Chapter 2, paragraph 17, Explosives Storage only.</i>

Section 4 - Measurement Parameters:

- Accurate inventory accountability.
- Adequate physical protection of explosives.

Section 5 - Implementation Considerations:

These standards are currently in use for active explosive magazines at the Nevada Test Site. There are no

3.12 ***Explosives Storage***

Latest Revision: 8/22/02

implementation costs.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

4. 1.1 *Fire Protection: Emergency Response*

Latest Revision: 12/9/02

Section 1 - Work Activity:

Fire Protection/Emergency Response to the Nevada Test Site (NTS) and Yucca Mountain Project is provided 24 hours, seven days per week by Fire Station No. 1 in Mercury, Nevada, and Fire Station No. 2 in Area 6. Responders also deploy to wildland fires adjacent to the NTS and vehicle fires and accidents on U.S. Highway 95 and other areas within Nye and Clark Counties as requested by civilian authorities and community emergency service providers through formal Memoranda of Agreement (MOA) and Memoranda of Understanding (MOU). Local fire department resources cover non NTS U. S. Department of Energy, National Nuclear Security Administration Nevada Operations Office (NNSA/NV) sites.

Fire Protection/Emergency Response consists of the following:

Firefighting. This is the control, confinement, extinguishment, salvage, and overhaul of fires in structures, vehicles, and wildland fire incidents.

Hazardous Materials Response. Responders provide technician level mitigation.

Aircraft Rescue and Firefighting. This activity includes control, confinement, and extinguishment of aircraft fires on the NTS as well as rescue of personnel on board. This capability is mandatory for Federal Aviation Administration (FAA)-certified airfields.

Aircraft Standby Support. Responders provide standby support as requested during aircraft refueling operations, landings, and takeoffs at airstrips on the NTS.

Fire Watch. Responders perform fire watch duties after normal duty hours on the NTS in the event facility detection and suppression systems fail. Fire and Rescue (F&R) personnel may provide a fire watch during the recovery phases of wildland fires and recovery operations. Note: Fire watch activities do not include operational/hot work-related events.

Incident Command. Responders provide a formal incident command structure for all emergency incidents.

Search and Rescue. Responders remove victims from structures, vehicles, confined spaces and other hazardous environments.

Communication Information Center (CIC) Operations. CIC Operators, firefighters, and paramedics provide the following services in Mercury, Nevada:

- Monitor fire detection systems for facilities on the NTS.
- Monitor and provide communication assistance for all NNSA/NV user radio frequencies.
- Receive local 911 and radio Mayday emergency requests.
- Dispatch appropriate emergency responders to incident scenes (fire, EMS, law enforcement).
- Monitor emergency responder radio traffic and serve as interface.
- Perform emergency notification/recall to the NTS Emergency Response Organization.
- Monitor NTS Hazardous Material Tracking System (HAZTRAK).

4. 1.1 *Fire Protection: Emergency Response*

Latest Revision: 12/9/02

- Serve as backup for HAZTRAK Emergency Response Information telephone point-of-contact for outbound NNSA/NV hazardous material shipments (WSS 3.6). The BN Duty Managers Office is has primary point-of-contact responsibility for this service.
- Monitor air-to-ground radio frequencies for NNSA/NV.
- Receive reports of communication systems failures and notifies appropriate personnel.

In-house Training Program. Continuing education is provided to staff firefighters and paramedics by in-house State of Nevada certified fire service instructors.

Section 2 - Hazards and Management Issues:

Hazards

The hazards which may be encountered by NTS firefighters include slips, trips, falls, over exertion, exposure to fire, fire products, hazardous materials, radiation, and blood borne pathogens. Additionally, various mechanical hazards may be encountered during use of rescue and firefighting tools and equipment.

Incident commanders and firefighters have several sources of information available for use during emergencies where unknown hazards may be present (chemical, radiological, biological). These include, but are not limited to, NTS-specific emergency management hazards assessments, emergency management hazards surveys, pre-fire plans, HAZTRAK and the emergency response guidebook. In addition, the application of requirements cited in the standards section of this Work Smart Standard provides additional methods for approaching hazardous situations.

Firefighters wear personal protective equipment (PPE) appropriate for the hazard to mitigate the above exposure effects. Firefighters performing fire extinguisher maintenance duties may be exposed to elevated noise levels and hazards associated with service equipment and compressed gas cylinders. These hazards are mitigated through appropriate PPE and job task specific training for extinguisher maintenance operations. Additionally, firefighters participate in a mandatory physical fitness program designed to improve their ability to withstand heavy exertion during emergency operations.

Management Issues

With the remote industrial setting of the NTS, failure to maintain qualifications, certifications, and licenses of firefighters and paramedics in accordance with the cited standards in Section 3, could result in loss of life, increased property and environmental damage, and negative publicity for NNSA/NV.

Section 3 - Standards:

The standards listed below are the minimum requirements to ensure 1) the safety and health of persons involved in emergency response activities, 2) the protection of other workers and the public by having qualified and properly equipped response personnel available in the event of emergencies, and 3) the protection of the environment in the event of hazardous material spills. Specifically, the following standards apply to NTS emergency response:

Standard	Title
14 CFR 139.325	Airport Emergency Plan

4. 1.1 *Fire Protection: Emergency Response*

Latest Revision: 12/9/02

Note This requirement shall only apply to operational and FAA certified airports.

29 CFR 1910.120(q) Hazardous Waste Operations and Emergency Response

Note Paragraph (q) describes activities for first responders.

29 CFR 1910.134 Respiratory Protection, Personal Protective Equipment

Note

29 CFR 1926.65(q) Hazardous Waste Operations and Emergency Response

Note Paragraph (q) describes activities for first responders.

Current, National Fire Codes (NFC) National Fire Protection Association (NFPA)

Note Added by BCR 2002-031.

Applicable NFC Codes and Standards are those which apply to fire department operations. The NTS Fire Chief monitors work assignments to verify the correct use of NFC requirements. As standards change, they will be reviewed for F&R operations.

DOE O 420.1A, CRD, Facility Safety, Fire Protection
Section 4.2

Note Updated by BCR 2003-041; change 3 was updated to 420.1A, CRD.

Only items relating to Fire & Rescue equipment, response, and training are applicable. Section 4.3.2.(k), Guidelines for Firefighting, is incorporated by reference to 4.2.1.

29 CFR 1926 Safety and Health Regulations for Construction

Note The "General Duty Clause," 29 CFR 1910 for general industry, and 29 CFR 1926 for construction activities, if properly applied, will mitigate the general employee's hazards not mitigated by the specific standards cited.

DOE G 440.1-5, Fire Safety, Guide 9/30/95, Fire Department Operations
EH

Note Added by BCR 2002-031.

Only Section 6, Fire Department Operations, is applicable.

Section 4 - Measurement Parameters:

The NTS F&R Baseline Operational Needs Assessment is the tool used for measuring emergency response capabilities of the NTS.

Additional benchmarks for measuring emergency response capabilities include:

- Actual training conducted versus planned (required) training. In addition to routinely required training, having conducted specialized nuclear and non-nuclear hazardous facility training.
- Equipment tests and certifications completed on time.
- Proficiency achieved on simulated emergencies in the following operational arenas:

4.1.1 *Fire Protection: Emergency Response*

Latest Revision: 12/9/02

- Hazardous material incidents (including radiological emergencies)
- Multiple victim incidents
- Structural firefighting with victim rescue
- Vehicle extrication
- Confined space rescue
- Utilization of the incident command system
- Aircraft rescue and firefighting*
- Wildland firefighting techniques

*Applicable if NTS F&R is required to meet response standards for FAA?certified airports.

Section 5 - Implementation Considerations:

The base service fire protection response element is currently implemented; however, in the event expansion of this element is required, firefighter recruitment, relevant certification reciprocity, and site specific training requirements may affect ability to fully staff and operate additional station locations in a timely manner. Significant increase in overtime levels may be required to operate new stations until recruitment process is completed, equipment, and apparatus is acquired, and facilities are made ready.

Compliance with certain NFC requirements relative to station design is dependent upon facility modifications or new structures to meet the intent of applicable NFC standards (i.e., NFPA 1500, NFPA 1221).

Implementation of new or modified requirements will follow an implementation schedule identified by the BN Nuclear Operations Implementation Plan, NOIP-04-2002.

Section 6 - Work Environment:

Firefighters and paramedics interact with workers and other members of the NTS Emergency Response Organization in various settings. These settings include a typical office environment and emergency scenes in varied weather conditions. Working conditions during emergency activities are diverse and potentially hostile, requiring the utmost attention to safety. Firefighters and paramedics may also interact with response professionals from surrounding communities through current MOAs and MOUs during routine emergencies and large-scale disasters.

Section 7 - Uncertainties or Issues:

Fire protection emergency response services described in this document are considered base level. Providing support above those indicated would require additional funding sources for the additional personnel, stations, equipment, or overtime assignments.

Section 8 - Training:

Firefighters and paramedics receive continuing education in accordance with the Federal, State, local requirements specified within the standards referenced in Section 3 of this document.

Emergency Medical Technician training is covered in WBS 4.1.3, Emergency Medical Services.

Section 9 - Vulnerabilities:

Failure to comply with Federal, State, local, or site-specific requirements may result in a reduction of delivered

4. 1.1 Fire Protection: Emergency Response

Latest Revision: 12/9/02

emergency services to the NTS, fines, company liability, and negative publicity for NNSA/NV.

Section 1 - Work Activity:

This work activity will be carried out by the Performance Based Management Contractor (PBM) for all PBM managed and operated NNSA/NV facilities at NTS, LV and NLV facilities. This activity does not apply to PBM managed facilities or operations at the Remote Sensing Laboratory (RSL) Nellis Air Force Base (except portable fire extinguisher maintenance and exchange), Special Technologies Laboratory (STL), Santa Barbara, California; Livermore Operations (LO), Livermore, California; and the RSL operations at Andrews Operations Air Force Base, Maryland. These facilities and operations are under the scope and jurisdiction of local and host fire departments or other fire protection jurisdictions.

This work activity is for the development, implementation, and maintenance of a comprehensive Fire Prevention Program, which meets the requirements of the standards cited in Section 3.

The PBM's Fire Prevention Program, in combination with their Integrated Safety Management System (ISMS), insures the appropriate protection to workers, the public, the environment, and departmental assets.

The major tasks associated with this work activity are:

1. Develop and maintain a written Fire Prevention Program.
2. Implement the written program by:
 - ? Establishing a comprehensive, written fire protection criteria that reflect any additional site-specific aspects of the Fire Prevention Program, including the organization, training, and responsibilities of the fire protection staff, administrative aspects of the Fire Prevention Program, and requirements for the design, design plan review, installation, operability, inspection, testing, and maintenance of fire protection systems.
 - ? Development and publication of written fire safety procedures, pre-fire strategies, plans and standard operating procedures to enhance the effectiveness of NTS fire fighting forces.
 - ? Development and publication of Fire Hazards Analyses (FHAs) for all applicable facilities, as described in the written program.
 - ? Conduct and document a "baseline" needs assessment that establishes the minimum required capabilities of NTS fire fighting forces. This includes minimum staffing, apparatus, facilities, equipment, training, fire pre-plans, off-site assistance requirements, and procedures.
 - ? Develop and implement a written comprehensive fire protection self-assessment program, which includes all aspects (program and facility) of the Fire Prevention Program. The assessment process includes tracking, prioritizing and monitoring the status of assessment findings/recommendations until final resolution is achieved. This includes fire inspection data.
 - ? Develop a written process for reviewing and recommending approval of fire safety "equivalencies" and "exemptions" to the NNSA/NV Authority Having Jurisdiction for fire safety.
 - ? Conduct facility fire inspections and fire hazard analysis as specified by the standards cited in Section 3.
 - ? Conduct investigations for fires or failed fire suppression equipment.
 - ? Conduct and document fire detection and suppression system acceptance testing. Fire extinguisher training including both live and classroom training.
 - ? Providing stand-by fire protection/fire prevention services for hazardous operations (i.e. confined space entry,

aircraft operations, explosives testing, etc.).

? Installing, removing, testing and maintenance of Digital Alarm Radio Transmitting Stations (DARTS) and portable Fire-Pac/Alarm Station units.

? Inspect, test, and maintain portable fire extinguishers as needed or requested.

Execution of this work activity requires the interface with and application of other Work Smart Standards work activities and the standards cited therein. Below are the typical WSS work activities for which interfacing is expected. Standards from other WSS will be incorporated as needed:

1.5.1-Records Management and Document Control

1.1.5-Training

1.8-Administrative Systems and Controls

2.1-Occurrence Reporting

2.7.1-Design Engineering

2.7.4-Visual and Quality Control Inspections

2.8-Construction

2.X-Hazard Category 2 & 3 Non-reactor Nuclear Facilities

3.4-Facility Maintenance

4.2.1-Occupational Safety & Health Programs

4.2.2-Industrial Hygiene

4.4-Radiation Protection

4.7-Quality Program

Section 2 - Hazards and Management Issues:

The safety and health hazards associated with the execution of this work activity are comparable to similar work conducted in construction and general industry. Potential hazards that may occur to either fire protection personnel or NTS Fire & Rescue personnel while performing these activities includes physical and biological stresses.

Management issues include;

- 1) ensuring that a fully qualified and adequate professional staff is available to carry out the roles and responsibilities of the Fire Prevention Program;
- 2) management support to ensure that appropriate fire prevention recommendations are implemented in a timely manner, and
- 3) implementation of the caWeb database system to track and manage fire impairments, prevention data (i.e., inspection, testing and maintenance schedules), deficiencies, etc.

Section 3 - Standards:

The unique Necessary and Sufficient set of standards applicable to this work activity are identified below. These unique standards in combination with standards from other WSS (see Section 1 above) constitute the comprehensive set of standards for execution of the work activity as described in Section 1 and are administered under the direction of the PBMC's Fire Marshal.

Standard

Title

29 CFR, Subpart E

Means of Egress

Note Added by BCR 2003-001.*General requirements for providing safe means of egress from fire and like emergencies.*

29 CFR, Subpart L

Fire Protection

Note Added by BCR 2003-001.*To be used as part of the basis for fire safety evaluations addressing portable and fixed fire suppression equipment, fire detection systems, and fire or employee alarm systems installed to meet the fire protection requirements of 29 CFR Part 1910, Subpart L.*

DOE O 420.1A, Section 4.2

Fire Protection

Note DOE O 420.1 Added by BCR 99-009. Revised by BCR 2003-001.*The requirement of Section 4.2 apply as stated.*

DOE-STD-1066-99

Fire Protection Design Criteria

Note Added by BCR 2003-001.*The standard will only be used for the performance of risk management evaluations for the construction of those facilities covered 2.X-Hazard Category 2 & 3 Non-Reactor Nuclear Facilities.*

DOE-STD-1088-95

Fire Protection for Relocatable Structures

Note Added by BCR 2003-001.National Fire Protection Association,
National Fire Codes

Applicable Standards

Note Added by BCR 2003-001.*A comprehensive set of applicable standards from the National Fire Codes (NFC) will be identified during the establishment of a project-specific design or to satisfy a particular project's requirements. This set of standards will vary from project to project and is situational in its application. The NFC also applies to operational provisions and hazardous situations. The selection and use of the NFC for inspection, testing and maintenance, or the analysis of new or existing construction, is identified by the Fire Prevention Program and administered under the direction of the PBMC's Fire Marshal. The proper application of the NFC in conjunction with current fire prevention activities will result in an acceptable level of hazard mitigation as well as providing for the best value to the client.*

Nevada Administrative Code (NAC) 477

State Fire Marshal

Note Revised by BCR 2003-001.*Applicable only to LV and NLV, Nevada facilities for fire protection, fire prevention and life safety because the State Fire Marshal is the Authority Having Jurisdiction for the North Las Vegas and Las Vegas, Nevada facilities. Facility design, fire protection/fire prevention and life safety is addressed by NAC 477.*

Uniform Fire Code (1997)

Volumes 1 & 2

Note Added by BCR 2003-001.*The selection and use of these codes will be specified in the PBMC's written Fire Prevention Program and procedures.*

DOE O 440.1A, CRD, paragraph 15(c)
only

Worker Protection Management for Federal Contractor Employees

Note Added by BCR 2003-001.

Only Section 15, Fire Protection (c), "Fire Watcher Requirements," applies.

Section 4 - Measurement Parameters:

- 1) Loss rates (as defined in DOE O 231.1, Chg 2, Section 5.a.(2)) are stable or declining. If an increase has occurred from the previous year's loss rate, the rate increase has not exceeded 10%.
- 2) Recurring fire protection program costs per \$100 of assessed value are stable and have not exceeded 10% of the historic norm.
- 3) Fire Prevention Program documents are comprehensive (as compared to the DOE "model" program) and current (updated every 3 years).
- 4) Fire Hazards Analyses and fire protection assessment reports are complete (as compared to the DOE "model") and current (refer to the risk-based schedule in DOE G 440.1-5).
- 5) Inventories of fire protection or fire prevention audit findings are decreasing (i.e. total numbers of new, open or delinquent findings).
- 6) Fire protection systems (including fire barriers) are inspected, tested, and maintained in accordance with the established frequencies.
- 7) Fire alarm activation statistics (number of alarms and cause) are current and accurate.
- 8) Fire protection system failure rates have not exceeded 10% of the historic norm.
- 9) For each type of fire protection system on site, maintenance costs have not exceeded 10% of the historic norm.
- 10) Fire suppression system and fire detection system technicians meet or exceed industry qualifications and training requirements.

Section 5 - Implementation Considerations:

LV and NLV facilities fall under the provisions of the Nevada Administrative Code (NAC) 477. As a result, the fire protection technician supervisor must be licensed by the State of Nevada for fire extinguisher maintenance.

Considerations relative to implementation of new or modified requirements applicable to 2.X facilities, Hazard Category 2 & 3 Non-reactor Nuclear Facilities are specifically described and discussed in Section 5 of the format-1 for WSS 2.X.

Access to a qualified and trained fire protection staff, including a fire protection engineer(s), technicians, and fire fighting personnel to implement the standards cited in Section 3.

Section 6 - Work Environment:

The work environment encountered during execution of this work activity is anticipated to include office facilities, high and low hazard chemical and radiological material and waste handling facilities, warehouses, and underground operations.

Section 7 - Uncertainties or Issues:

None

Section 8 - Training:

No specific training other than that identified within the cited standards.

Section 9 - Vulnerabilities:

No vulnerabilities have been identified.

Section 1 - Work Activity:

Emergency Medical Services provides state-of-the-art, paramedic level care to employees and visitors of the Nevada Test Site. The basic service is provided 24 hours, 365 days per year at Mercury, Nevada. Paramedic crews also respond to emergencies on U.S. Highway 95, and other areas within Nye and Clark Counties as requested by civilian authorities and community emergency service providers.

The paramedics and ambulances are certified with the State of Nevada to operate at the advanced level (paramedic) for treatment and transport of the ill or injured.

The Emergency Medical Services (EMS) consists of the following activities:

Emergency response:

Paramedics respond to emergency situations in Department of Transportation and State of Nevada approved ambulances. Paramedics apply advanced level treatment techniques to occupational and non-occupational injuries and illnesses by utilizing approved medical protocols. Paramedic crews also provide standby support for special operations projects on an as needed basis. A select team of paramedics is assigned to Department of Energy national Response Teams for medical support during actual deployments and training exercises. Paramedics are an integral part of fire suppression response activities and provide rehabilitation services to firefighters. Paramedics are also haz-mat technician level trained and provide full support (medical treatment, medical evaluation, and incident mitigation) during hazardous material incidents.

EMS maintains a multiple victim incident response capability by deployment of a special purpose vehicle/trailer. The special truck and trailer provide a capability to treat 30-50 patients at the accident/incident scene without expending ambulance supply inventories. Additionally, the trailer is equipped with numerous radio frequencies in the command section to provide command and coordination capabilities as a back-up incident command post.

Routine Clinical Care:

Paramedics provide routine clinical care and processing at the NTS. This includes treatment, documentation responsibilities, and routine drug screen collection (drug screens collected in Mercury at the medical clinic only).

In-House Paramedic Training Program:

EMS is responsible for maintaining an in-house continuing education program for staff paramedics and Firefighter EMTs. The paramedics and EMTs receive documented training in accordance with State of Nevada regulations by certified Nevada EMS Instructors.

Quality Improvement:

Each ambulance run report is reviewed by the Platoon EMS Instructor for correctness of treatment protocols, documentation, and timely response. Suspect or outstanding reports are forwarded to the EMS Service Director and Medical Director for review and action. Routine meetings are held (at least quarterly) with the Medical Director for review of all ambulance run reports, protocol discussions, and current EMS trends.

4. 1.3 *Emergency Medical Services*

Latest Revision: 11/30/04

Section 2 - Hazards and Management Issues:

EMS Personnel are potentially exposed to hazards such as chemicals, radiation, medical wastes, and biohazards. Due to hazard exposure during activities, EMS personnel wear personal protective equipment and practice universal precaution procedures.

Management issues associated with the EMS include understanding the roles and responsibilities of EMS and other health care professionals not associated with the Emergency Services Department, Fire Protection & Emergency Medical Services Section. The importance of maintaining interface between EMS personnel assigned to the Emergency Services Department and Occupational Medicine, and other elements of the emergency response organization, is critical to ensure proper patient care, timely reporting of emergency situations, proper mitigation of emergency incidents, and oversight of EMS protocol delivery.

Due to the remote industrial setting of the NTS failure to maintain paramedic and EMT level certifications, licenses, and State of Nevada operating permit would result in a decrease of standard of care and the ability to transport patients long distances to definitive care facilities. This would potentially result in increases mortality and morbidity.

Section 3 - Standards:

The Necessary & Sufficient set of standards applicable to this work activity is as follows:

Standard	Title
29 CFR 1910.1030 <i>Note</i> <i>Changed by BCR 2004-025, 9/15/04.</i>	Blood Borne Pathogens
29 CFR 1910.120 <i>Note</i> <i>Added by BCR 99-011.</i>	Hazardous Waste Operations and Emergency Response
29 CFR 1910.132 <i>Note</i> <i>Added by BCR 99-011.</i>	Personal Protective Equipment, General Requirements
29 CFR 1910.134 <i>Note</i> <i>Added by BCR 99-011.</i>	Respiratory Protection, Personal Protective Equipment
29 CFR 1926.65 <i>Note</i> <i>Added by BCR 99-011.</i>	Hazardous Waste Operations and Emergency Response
KKK-A-1822 <i>Note</i> <i>Added by BCR 99-011.</i>	Federal Specification for Ambulance Design, or as Approved by the State of Nevada EMS Representative
National Fire Protection Association (NFPA) 1581 <i>Note</i> <i>Added by BCR 99-011.</i>	Fire Department Infection Control Program

4.1.3 *Emergency Medical Services*

Latest Revision: 11/30/04

National Fire Protection Association
(NFPA) 1999

Standard on Protective Clothing for Emergency Medical Operations

Note *Added by BCR 99-011.*

National Fire Protection Association
(NFPA) 471

Recommended Practice for Responding to Hazardous Materials Incidents

Note *Added by BCR 99-011.*

NRS 450B.015 - 450B.936

All Encompassing Regulation Governing Emergency Medical Services

Note *Added by BCR 99-011.*

National Fire Protection Association
(NFPA) 472

Professional Competence of Responders to Hazardous Materials Incidents.

Note *Added by BCR 99-011.*

National Fire Protection Association
(NFPA) 473

Standard for Competencies for EMS Personnel Responding to Hazardous Materials Incidents

Note *Added by BCR 99-011.*

Section 4 - Measurement Parameters:

Many health measures associated with the delivery of pre-hospital emergency medical care in critical incidents are not directly attributed to the paramedic service. However, EMS plays a vital role in improving patient survivability during critical emergencies, thereby, reducing negative impacts to the user on the NTS. Response times are evaluated to ensure timely ingress and egress of incident locations, including two minute or less out-of-station requirement. Performance parameters such as, but not limited to, medical protocol adherence, timely response, appropriate communications and written documentation are discussed during run review meetings with the Medical Director.

Section 5 - Implementation Considerations:

The base service EMS system is currently implemented, however, in the event expansion of the EMS service is required, paramedic certification reciprocity and site-specific training requirements may affect ability to fully staff and operate additional station locations in a timely manner. Significant increase in overtime levels may be required to operate new stations until recruitment process is completed, equipment acquired, and facilities made ready. A coordinated effort between project planners, project managers and ESD is required to facilitate EMS expansion with minimal implementation impact.

Section 6 - Work Environment:

Paramedics and firefighter EMTs interact with workers and other members of the NTS Emergency Response Organization in a clinical setting as well as emergency incidents. Working conditions during emergency activities are diverse and potentially hostile (ambient environmental conditions, hazardous material incidents, fires, etc.) requiring the utmost attention to safety. Paramedics and firefighter EMTs may also interact with emergency response professionals from surrounding communities through MOA and MOU during routine emergency incidents and large-scale disasters.

Section 7 - Uncertainties or Issues:

EMS services described in this document are considered base level. Providing support above those indicated would require additional funding sources to provide either additional personnel, stations, or overtime assignments.

Section 8 - Training:

Paramedics and firefighter EMTs receive continuing education in accordance with State of Nevada regulations. Certifications and licenses must be maintained to remain in compliance with State Law. Additionally, paramedics and firefighter EMTs are required to receive site-specific training in accordance with Company and Department of Energy requirements.

Section 9 - Vulnerabilities:

Failure to comply with Federal, State, Local, or site-specific requirements may result in a reduction of emergency medical care to NTS workers. As a result of noncompliance, fines as well as increased company liability and negative publicity for DOE/NV. Worst-case scenario would result in cessation of paramedic level ambulance transport capabilities, thereby, increasing the potential for loss-of-life and morbidity during emergency situations at the NTS.

Section 1 - Work Activity:

Systematically, prepare, implement, validate and revise policies, procedures and practices that will ensure continuous evaluation, identification, and prevention or control of general, specific and potential work place hazards.

Assist management in performing a variety of work site evaluations to identify existing hazards and operations where changes could create additional hazards. Identification goes beyond the specific requirement of the law to address all hazards.

Participate in project planning activities at the onset so that hazards are identified and prevented through effective design which incorporates safety and health concerns as an integral part of the project from inception. This would include design package review, preliminary hazard analyses, etc.

Assist managers in integrating safety and health training into other training including performance requirements and job practices.

Provide identification, exposure monitoring, and technical advice to managers to eliminate or adequately control employee exposure to toxic or hazardous substances and other unhealthful conditions.

To the maximum extent possible, employees affected by these actions are involved with OSH professionals in safety assessments, including:

- Conducting comprehensive baseline work site surveys.
- Analyzing and planning OSH requirements for new facilities or modification to existing facilities, processes, materials, and equipment.
- Assisting with the conduct of job hazard analyses.
- Performing regular site safety and health inspections.
- Promptly responding to employee concerns or complaints regarding their safety and health.
- Investigating accidents and near misses to identify causes and means to prevent them.
- Analyzing injury and illness statistics over time to identify and prevent trends with common causes.

Establish controls and provide technical assistance in correcting current and potential hazards in a timely manner.

Interface with other operations and managers to assure other program elements effectively contribute to the safety and health of the work environment to include procurement, maintenance of facilities and equipment, medical departments, engineering, etc.

Interface with DOE and other outside organizations, including professional societies and standards committees.

Perform periodic comprehensive program audits to evaluate the whole set of safety and health management measures, methods, and processes to determine their adequacy in protecting against hazards and if the policy and procedures are properly implemented and are meeting the objectives of the program.

Processing requests for variations, exemptions, etc.

Ensuring standards, statistical information related to the programs, program elements, etc., are either posted for employee viewing or are available on request.

Section 2 - Hazards and Management Issues:

Hazards:

Failure to achieve effective control over work site hazards can result in loss of human life, lifetime disability, and pain and suffering by employees. These are unacceptable by-products of doing work. This WBS represents an element of the overall OSH program. The occupational health program is discussed in WBS 4.2.2.

Workers and staff performing this OSH function are exposed to the same hazards and environment as those performing the activity being reviewed.

Personnel performing this work will comply with other applicable program requirements developed through the Necessary and Sufficient process.

Management Issues:

Failure to have an effective program can have an adverse effect on the health and safety of workers and on operating costs. Management commitment is a key element in implementing and maintaining an effective safety and health program. To be effective, management must regard safety and health protection with as much enthusiasm as they approach other organizational goals and objectives. The managerial practices that are essential to the safety and health program are the same practices, means and methods used by employers to achieve cost control, quality and productivity. The safety and health program must have equal organizational priority in order to succeed.

An effective program is defined in the Federal Register, discussed in paragraph 5.0. The management principles are also repeated in the U.S. Department of Labor Voluntary Protection Program; however, actions in addition to those required by the standards or public law may achieve higher levels of recognition. There is an additional cost to participate in the VPP program. This is considered an acceptable cost of doing business for this work activity and includes work given to subcontractors. Some of these actions are:

- Investigation of accidents and near miss accidents and publishing the lessons learned.
- Holding managers accountable for ES&H through the performance evaluation process.

- Including an evaluation and screening of subcontractors' ES&H performance and programs before awarding contracts.
- Annual ES&H program assessments.
- Site orientation of all non-contractor employees to ensure they are aware of the ES&H requirements, hazards and actions.
- Concerns expressed by employees are addressed and documented.
- Employees are included in the resolution of ES&H concerns or problems. They are included in the safety and health committees and through a suggestion program.
- All members of the safety and health committees are equal members to participate in the resolution of ES&H concerns or problems and improvement of ES&H programs.
- Job site hazard analysis and pre-task analysis programs.
- Analysis and publishing of hazards identified and trends.
- Medical involvement in wellness programs and inclusion of medical staff in employee programs.

Section 3 - Standards:

The DOE Nevada operations involve work at remote sites, specifically, Santa Barbara and Amador Valley (California), and at sites controlled by others such as Los Alamos Operations (New Mexico), Nellis Air Force Base (Nevada), and WAMO at Andrews Air Force Base (Maryland). These standards will be applicable and will be implemented. Contractors are required to comply with the host requirements in those areas where a support/occupancy agreement exist. Conflicts will be resolved in accordance with the provisions of these agreements. Safety and health professionals performing technical support or oversight at field locations acknowledge they have a requirement to comply with the rules at those sites and to have the required training.

Standard**Title**

29 CFR 1910

Occupational Safety and Health Standards

Note Specified by DOE O 440.1A, CRD, paragraph 12.a. Added by BCR 2003-021

29 CFR 1910

Occupational Safety and Health Standards

Note This WBS provides the overall programmatic structure for worker protection which is afforded by the incorporation of specific protective measure into each separate WBS. These OSHA standards represent current commercial practices. The cross-reference of individual subsections with WBS elements for 1910 and 1926 (included for information with this acceptance summary) has enabled verification that hazards identified with work activities are addressed. Individual WBS evaluations have verified that the cited OSH standards adequately mitigate identified hazards or additional protective measures are identified therein. In the aggregate, these standards and the accompanying implementation considerations enable an acceptable comprehensive worker safety program.

29 CFR 1910

Occupational Safety and Health Standards

Note This WBS provides the overall programmatic structure for worker protection which is afforded by the incorporation of specific protective measure into each separate WBS. These OSHA standards represent current commercial practices. The cross-reference of individual subsections with WBS elements for 1910 and 1926 (included for information with this acceptance summary) has enabled verification that hazards identified with work activities are addressed. Individual WBS evaluations have verified that the cited OSH standards adequately mitigate identified hazards or additional protective measures are identified therein. In the aggregate, these standards and the accompanying implementation considerations enable an acceptable comprehensive worker safety program.

29 CFR 1910

Occupational Safety and Health Standards

Note This WBS provides the overall programmatic structure for worker protection which is afforded by the incorporation of specific protective measure into each separate WBS. These OSHA standards represent current commercial practices. The cross-reference of individual subsections with WBS elements for 1910 and 1926 (included for information with this acceptance summary) has enabled verification that hazards identified with work activities are addressed. Individual WBS evaluations have verified that the cited OSH standards adequately mitigate identified hazards or additional protective measures are identified therein. In the aggregate, these standards and the accompanying implementation considerations enable an acceptable comprehensive worker safety program.

29 CFR 1910

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29 CFR 1926

Safety and Health Regulations for Construction

Note

29 CFR 1926

Safety and Health Regulations for Construction

Note

29 USC 651

Occupational Safety and Health Act

Note This WBS provides the overall programmatic structure for worker protection. It is supplemented by the incorporation of specific protective measures uniquely applicable to each separate WBS. These OSHA standards represent current commercial practices. Individual WBS evaluations have verified that the cited OSH standards adequately mitigate identified hazards or additional protective measures are identified therein. In the aggregate, these standards and the accompanying implementation considerations enable an acceptable comprehensive worker safety program.

ANSI Z49.1, Sections 4.3 and E4.3

Safety in Welding, Cutting and Allied Processes

Note Sections 4.3 & E4.3 of the 1994 edition or equivalent sections of subsequent editions. Specified by DOE O 440.1A, CRD, 12.j. Added by BCR 2003-021.

O 440.1A, CRD (Only specific paragraphs noted below)

Worker Protection Management for DOE, Federal, and Contractor Employees (Worker Protection Program)

Latest Revision: 9/17/03

Note Only the following paragraphs for a Worker Protection Program apply with the deviations noted: 1-5, 6.a-6.e & 6.h, 7, 8, 10, 11, and 13.
 Paragraph 1.b. - This requirement shall be integrated in accordance with the contractors contract clause regarding safety management, e.g., 970.5204-2, Integration of Environment, Safety and Health into the Work Planning and Execution (June 1997).
 Paragraphs 6.a. & 6.b. - "Provide workers" is replaced with "Provide a designated employee representative."
 Paragraph 10 - This paragraph will be met through implementation of a contractors contract clause regarding safety management, e.g., 970.5204-2, Integration of Environment, Safety and Health into the Work Planning and Execution (June 1997).
 Paragraph 11 - Contractors and NTS users shall assure visitors receive a site hazards briefing and are escorted by a trained and qualified employee. Part 11 also applies to "subcontractors."
 Added by BCR 2003-021.

O 440.1A, CRD, paragraph 21

Worker Protection Management for DOE, Federal, and Contractor Employees: Motor Vehicle Safety

Note Added by BCR 2003-021.

29 CFR 1904

Record Keeping for Occupational Injuries/Illnesses

Note Establishes record keeping requirements for injury and illness data. Provides for annual posting of data for employee information.

29 CFR 1905 Subpart B

Applications for Variances, Limitations, Variations, Tolerances, Exemptions and Other Relief

Note Prescribes methodologies for seeking temporary or permanent relief from the OSHA standards adopted under the overall program. Hazards for work that is accomplished where an OSH standard cannot be met or in situations where compliance would cause a greater hazard are addressed through the safety analyses and the controls implemented. A variation or exemption request also addresses the interim or equivalent level of protection until final approval is granted. In this context application for the variances, limitation, variations, tolerances, exemptions and other relief would be submitted to DOE, as the federal agency of jurisdiction.

DOE M 231.1-1, Chg. 2, CRD

Environmental Safety and Health Reporting Manual

Note Chapter II only. On 01/15/02, DOE N 231.1 cancelled paragraphs 2a, 2a(1), 2a(2), 2b, 2b(1), 2b(2), 2i(3)(a)-2i(3)(d) of Chapter II and Appendix A of this manual. BCR 2003-029 revised the standard citation and note.

National Fire Protection Association (NFPA) 70

National Electrical Code (NEC)

Note Specified by DOE O 440.1A, CRD, 12.k. Added by BCR 2003-021.

National Fire Protection Association (NFPA) 70E

Electrical Safety Requirements for Employee Workplaces

Note Specified by DOE O 440.1A, CRD, 12.l. Added by BCR 2003-021.

Section 4 - Measurement Parameters:

- Injuries and illness rates consistently sustained below those experienced by comparable industries.
- Development and use of an OSH performance standard for all employees. The performance standard and

measure would include positive as well as negative evaluations. This results in notable reduction in Workers' Compensation costs.

- Management commitment will be measured by employee participation in and the success of the performance based safety program and the OSH committees, in reducing operating costs associated with incidents, accidents, injuries and illnesses.

- The effectiveness of the corrective actions can be demonstrated by the reduction of repeat deficiencies.

- Number of job site or pre-task analyses conducted that identify and remediate problems that could cause delays in delivery of the work or products, or prevent major safety and health impact on operations.

- The effectiveness of corrective actions through analysis of injury/illness data to show reduction in workers' compensation costs.

Section 5 - Implementation Considerations:

Implementation can be accomplished with minimal impact.

The establishment of an effective OSH program is based on the development of management principles that are used by employers who are successful in protecting the safety and health of their employees. These management principles were developed into program elements and promulgated as voluntary guidelines by the U.S. Dept. of Labor, Federal Register (FR)/Volume 54, No. 16, dated January 26, 1989. These same principles are used in the Voluntary Protection Program (VPP). This FR states that the savings of an effective program on construction projects is 3.2 times the cost. This cost was discussed in the Business Roundtable Report (Improving Construction Safety Performance A-3, January 1982) and is referenced in the discussion of the Federal Register. It further states that of even one medical or workers' compensation claim from an injury or illness \$5-50 or more is likely to be spent on indirect costs, such as repair of damage to buildings, equipment or tools to be replaced, damaged products or materials and to catch up for production delays. An additional \$1-3 in indirect costs will be spent for hiring and training replacements and to investigate the incident.

The OSH programs also include a Voluntary Protection Program, recognized by DOE, OSHA and industry as a higher level program with measurable results and continuous improvement.

Implementation of the OSH requirements issued in the company procedures or instructions are integrated into the work processes. Implementation of specific OSH requirements, not described by company procedures or instructions, are applied directly from the federal regulations. These procedures and regulations are performance based and accomplished by those who are held accountable to control the work processes, the work site and the employees, i.e., the first line supervisors. Employee participation is important to ensure that they contribute equally to the success of the program.

The standards indicated above are the same that are applied to commercial industries. These standards are applied to all subcontractors through the contracting process. The flow-down of requirements is not covered in this work activity, but addressed in WBS 1.0.

Section 6 - Work Environment:

The work is conducted in an industrial complex where general industry and construction type of work is performed. The work environment includes offices, hazardous waste sites, construction sites, buildings, outdoors in a desert environment with extremes of hot and cold, and remote work areas.

Section 7 - Uncertainties or Issues:

DOE's exemption to enforcement activities by the U.S. Dept. of Labor, OSHA could be changed or eliminated. This action would expose DOE/NV Operations and the contractor to enforcement activities which could result in monetary penalties.

Section 8 - Training:

Training of safety and health professionals to maintain certifications and currency of OSH rules, regulations, and updates is an integral part of an effective OSH program. Maintaining the highest quality of safety and health professionals is part of the VPP. Contractors must fund and support certain certifications of OSH professionals, i.e., Certified Safety Professionals, Certified Occupational Health and Safety Technicians, and Certified Industrial Hygienists. Failure to fund and support the certifications of OSH professionals would degrade the support and the assets to the VPP.

Section 9 - Vulnerabilities:

Adverse publicity from public concerns regarding the safety and health of the work sites could arise from increases in injuries/illnesses, Workers' Compensation costs, loss of productivity, fatalities, serious accidents, etc., if only the standards, and not the voluntary protection program, are implemented.

Section 1 - Work Activity:

The Industrial Hygiene program is designed to protect the occupational work force and the non-occupational (visitors, etc.) work force from exposure to chemical, biological and physical hazards resulting from activities conducted at the Nevada Test Site and with other Nevada operations to include the Losee Road Operations (North Las Vegas, Nevada), Remote Sensing Laboratory (Nellis AFB, Nevada), Los Alamos Operations (Los Alamos, New Mexico), Special Technology Laboratory (Goleta, California), Amador Valley Operations (San Francisco, California) and the Washington Aerial Measurement Operations (Andrews AFB, Maryland). All the sites have common industrial hygiene requirements.

The major elements of the Industrial Hygiene program are to: anticipate potential work place hazards; recognize potential work place hazards; evaluate potential work place hazards; and control potential work place hazards. Each activity is explained below.

Anticipate Potential Work Place Hazards: Potential work place hazards are anticipated by reviewing construction and maintenance work packages, engineering plans and drawings, project work activity plans, and project health & safety plans. Through this review process, industrial hygiene recommendations are identified to the originating agency for inclusion in the project to minimize personnel exposures associated with the project. The anticipated work place chemical hazards result from activities conducted with toxic and hazardous substances including, but not limited to, asbestos, lead, formaldehyde, isocyanates, silica and numerous solvents and cleaners. The anticipated work place biological hazards result from activities conducted with bloodborne pathogens, rodents and their excreta, and exposures to humans with communicable diseases. The anticipated work place physical hazards result from noise, non-ionizing radiation (including lasers), heat & cold stress and ergonomic-related work activities. Note that ionizing radiation is covered under Radiological Protection.

Recognize Potential Work Place Hazards: Potential work place hazards are recognized through periodic work place health hazard inventories and health hazard assessments. The health hazard inventories identify potential health hazards. The health hazard assessments are qualitative evaluations of work place hazards using professional judgment, along with information on the potential hazards of the agent and its likelihood of release to the work place environment. From these health hazard assessments a priority list of monitoring requirements is established.

Evaluate Potential Work Place Hazards: Potential work place hazards are evaluated by the scientific, quantitative measurement of chemical, biological and physical hazards such as noise, airborne chemical concentrations, non-ionizing radiation (radio frequency), and temperature extremes associated with heat & cold stress.

Control Potential Work Place Hazards: Potential work place hazards are controlled by hazard control methods implemented by line management. Hazard control methods are selected based upon the following hierarchy: engineering controls (e.g., substitution, isolation and ventilation); work practices and administrative controls (e.g., employee rotation, back shift scheduling, etc.) that limit worker exposures; use of personal protective equipment (e.g., respirators).

Section 2 - Hazards and Management Issues:

The health hazards associated with the DOE Nevada operations are comparable to similar work conducted in

4. 2.2 Industrial Hygiene

Latest Revision: 8/18/03

construction and general industry. Potential hazards that occur to both the industrial hygienist and the worker while performing these activities includes exposures to numerous chemical, physical and biological stressors.

Management issues include; 1) ensuring that a fully qualified and adequate professional staff is available to carry out the roles and responsibilities of the industrial hygiene program; 2) management support to ensure that appropriate industrial hygiene recommendations are implemented in a timely manner, and 3) implementation of a viable database system to store and manage industrial hygiene data. Presently the only existing databases are the Health Hazard Inventory system and Flow Gemini system. These systems, when implemented, will increase tracking capabilities and allow meaningful performance measurements, such as the tracking and trending of occupational exposures as noted in Section 4.0, Measurement Parameters. 4) a need for an Ergonomics Program under best management practice, since there are no adoptable standards.

Section 3 - Standards:

The following standards, controlling physical, chemical and biological hazards have been determined to be necessary & sufficient to serve as the basis for an Industrial Hygiene Program. These standards are in accordance with the "law of the land" and are typically followed in industrial hygiene programs. Professional judgment is used in providing the best protection to the worker in cases where standards do not agree. Facilities at DOE/NV-managed locations are subject to requirements of the host states and local governments.

Standard	Title
29 CFR 1910.1000	Air Contaminants
<i>Note If conflict exists between PELs and the TLVs, professional judgment will be used.</i>	
29 CFR 1910.1001	Asbestos
<i>Note Asbestos abatement activities except design and actual abatement (asbestos removal) are implemented under the Industrial Hygiene Program.</i>	
29 CFR 1910.1020	Access to Employee Exposure and Medical Records
<i>Note Redesignated 29 CFR 1910.1020, Federal Register 31427, June 20, 1996.</i>	
29 CFR 1910.1025	Lead
<i>Note The Lead Management Program as defined in this standard is used to minimize worker risk of lead exposure through the use of engineering controls and good work practices. The program includes worker protection requirement that involves performing exposure monitoring of operations that generate lead dust and fume in the work place. Medical Services is responsible for the medical monitoring requirements outlined in this standard.</i>	
29 CFR 1910.1048	Formaldehyde
<i>Note Work place monitoring and practices specified in this standard are used to control formaldehyde exposure to workers.</i>	
29 CFR 1910.1200	Hazard Communication
<i>Note Programmatic requirement applicable to all WBS elements.</i>	
29 CFR 1910.134	Respiratory Protection, Personal Protective Equipment

4. 2.2 *Industrial Hygiene*

Latest Revision: 8/18/03

Note *The program elements include the selection and extent of respiratory protection, fit-testing and training of the users; procurement, and maintenance and issuance of respirators. Occupational Medicine is responsible for medically qualifying respirator users. Line Management is responsible for ensuring the proper use of the respirator in the work place. Medical Services performs medical evaluations for employees who wear respirators.*

29 CFR 1910.95 Occupational Noise Exposure

Note

29 CFR 1926.103 Respiratory Protection

Note *The program elements include the selection and extent of respiratory protection, fit-testing and training of the users, procurement, and maintenance and issuance of respirators. Occupational Medicine is responsible for medically qualifying respirator users. Line Management is responsible for ensuring the proper use of the respirator in the work place. Medical Services performs medical evaluations for employees who wear respirators.*

29 CFR 1926.1101 Asbestos

Note *Asbestos abatement activities except design and actual abatement (asbestos removal) are implemented under the Industrial Hygiene Program.*

29 CFR 1926.1148 Formaldehyde

Note *Comply with the provision of 29 CFR 1910.1048, Federal Register 31427, June 20 1996.*

29 CFR 1926.33 Access to Employee Exposure and Medical Records

Note *See 29 CFR 1910.1020, Federal Register 31427, June 20, 1996.*

29 CFR 1926.59 Hazard Communication

Note *See 29 CFR 1910.1200, Federal Register 31427, June 20, 1996.*

29 CFR 1926.62 Lead

Note *The Lead Management Program as defined in this standard is used to minimize worker risk of lead exposure through the use of engineering controls and good work practices. The program includes worker protection requirement that involves performing exposure monitoring of operations that generate lead dust and fume in the work place. Medical Services is responsible for the medical monitoring requirements outlined in this standard.*

40 CFR 763 Subpart E Asbestos Containing Materials in Schools

Note *Contains the required actions necessary to perform operations involving the identification, sampling, analysis, assessment, response actions, operations & maintenance, record-keeping and labeling of friable and non-friable asbestos-containing materials in the work place.*

American Conference of Governmental Threshold Limit Values (TLVs) for Chemical Substances and Physical
Industrial Hygienists Agents and Biological Exposure Indices

Note *(most recent edition) when ACGIH Threshold Limit Values (TLVs) are lower (more protective) than Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits. [When ACGIH TLVs are used as exposure limits, DOE operations shall nonetheless comply with the other provisions of any applicable OSHA-expanded health standard.] The TLVs for exposures to laser emissions in the ACGIH Indices are excluded from this requirement. Specified by DOE O 440,1A, CRD, 12.g. Note revised by BCR 2003-021.*

4.2.2 Industrial Hygiene

Latest Revision: 8/18/03

American National Standards Institute
(ANSI) Z136.1

Safe Use of Lasers

Note *Methods defined in this standard are used to ensure the safe use of lasers and laser systems. Only the exposure limits and technical requirements apply. Programmatic components of ANSI Z136.1 do not apply. Limits of applicability are specified by DOE O 440.1A, CRD, 12.h. Note revised by BCR 2003-021.*

American National Standards Institute
(ANSI) Z88.2

Practices for Respiratory Protection

Note *For 29 CFR 1926 respiratory programs. Specified by DOE O 440.1A, CRD, paragraph 12.i. Note revised by BCR 2003-021.*

Center for Disease Control and Prevention
(CDC)

Hantavirus Infection - Southwestern United States: Interim
Recommendations for Risk Reduction

Note *These CDC guidelines are used for conducting inspections of work places, prevention & control of hantavirus infections in the work place, and Hantavirus Awareness training in conjunction with the Hazard Communication (HAZCOM) Training program. These CDC guidelines are used because they contain the only defined prevention and control measures published by a government agency.*

Nevada Administrative Code (NAC) 618

Abatement of Asbestos

Note *Establishes Nevada State license and operational requirements for Industrial Hygiene personnel and all others who work with asbestos, especially on asbestos abatement projects. Failure to comply with this standard in the State of Nevada will result in potential fines and/or imprisonment. (Applies to Nevada operations only.)*

O 440.1A, CRD (Only specific paragraphs
noted below)

Worker Protection Management for DOE, Federal, and Contractor
Employees (Worker Protection Program)

Note *Only the following paragraphs for a Worker Protection Program apply with the deviations noted. Paragraphs 6.f. & 6.g, 7, 8, 9.b. - 9.d, 10, 11, and 18 Paragraph 9.b shall be met through implementation of the contract clause regarding safety management, e.g., 970.5204-2, Integration of Environment, Safety and Health into the Work Planning and Execution (June 1997). Added by BCR 2003-021*

Section 4 - Measurement Parameters:

Tracking, and trend analysis over a period of time of work place exposures to determine if these exposures are decreasing as a function of the task(s) to include implementation of engineering controls, chemical substitutions and administrative controls.

Number of Industrial Hygiene evaluations conducted versus the number of hazardous work operations.

Section 5 - Implementation Considerations:

Overall implementation of the standards is complete. Implementing the issues identified in Section 7.0, Uncertainties Or Issues, would result in significant savings of time and money. In addition, streamlined, well-defined industrial hygiene program elements for all Nevada Operations would result in the more efficient use of available manpower and funding.

Industrial Hygiene program air sampling operations include requirements in accordance with procedures governing analytical laboratory operations. Industrial Hygiene will comply with either (or both) of the following guidelines depending upon the requirements set forth by the contracted laboratories:

- National Institute of Occupational Safety & Health (NIOSH) "Sampling Methods." Industrial Hygiene uses this publication as a primary guideline in performing air monitoring in the work place.

- Occupational Safety & Health Administration (OSHA) "Analytical Methods." Industrial Hygiene uses this publication as a primary guideline in performing air monitoring in the work place.

If an Ergonomics Program is implemented, costs savings due to reduced ergonomic injuries can be realized.

It is accepted industry practice that the standards cited in section 3.0 apply typically to industrial hygiene operations and therefore, the same standards would apply to sub-contractor operations.

Section 6 - Work Environment:

The work is conducted in an industrial complex where general industry and construction work is performed to include underground operations (tunneling) and large-hole drilling.

Section 7 - Uncertainties or Issues:

It is uncertain whether the Industrial Hygiene's Program's source of funding for its consulting service will be common site support or as direct charges to projects. In addition, funding sources for required across-the-board programmatic elements such as the Hazard Communication, Asbestos and Lead programs, and annual work place evaluations are uncertain. The consequences of eliminating the programmatic elements are: 1) contradictory interpretation of regulatory requirements that may lead to violations of, or unnecessary expenses associated with compliance to non-existent requirements; 2) not all work places would be visited on a periodic basis which could result in potential unrecognized hazards that may lead to personal overexposures; and 3) the reduced ability of Industrial Hygiene to anticipate potential work place hazards.

The expansion of the Health Hazard Inventory and Flow Gemini systems to the NTS cannot be accomplished without additional funding and personnel. The expansion of these systems to the NTS would: 1) provide a repository of historical industrial hygiene work place exposure data; 2) give Occupational Medicine an expeditious method of correlating occupational illnesses with potential causative agents in the work place; 3) provide to Environmental Management an efficient means of collecting data for required U.S. and State Environmental Protection Agency (EPA) reports; and 4) result in significant cost savings realized by reduced man-hours expended on the manual DOE compilation of data.

There is a proposed OSHA standard for Ergonomics, and if passed, it would be subject to review under the change control process before addition to the set of N&S standards.

Section 8 - Training:

Training of Industrial Hygiene professionals and technicians to acquire and maintain professional certifications and licenses, and to maintain currency in OSHA rules, regulations and updates is required.

Section 9 - Vulnerabilities:

N/A

4.3.1 *Medical Program Management*

Latest Revision: 7/30/02

Section 1 - Work Activity:

The physician responsible for the delivery of medical services shall be named the Site Occupational Medical Director (SOMD). The SOMD is responsible for the planning, implementation, and oversight of federal and contractor occupational medical programs providing services to users at DOE/NV sites and activities. These services shall include EAP.

A contractor occupational medical program shall provide occupational health services to federal and contractor employees. The goal of these services shall be to earliest possible detection and mitigation of occupational illness and injury.

The SOMD or designee shall participate as a member of each worker protection team established by each user of DOE/NV sites.

1. Coordinate with other safety and health professionals to identify work-related or work site hazards and their possible health risks to employees;
2. Possess a current knowledge of actual or potential work-related hazards through visits to all areas of DOE/NV site.

Oversight will be conducted by the SOMD or designee, and will be in accordance with these standards referenced in section 3.0, Standards.

The SOMD provided medical oversight and medical direction to emergency medical services (EMS) administered at the NTS in accordance with state law. The SOMD, or physician designee, will be available 24 hours per day, 7 days per week, for contact regarding patient treatment orders of existing protocols, and notification of emergency responses involving patient care.

The SOMD provides oversight, direction and authority to all personnel assurance or personnel surety programs, and mandatory physical conditioning programs (security force and fire department requirements, for example).

Section 2 - Hazards and Management Issues:

Due to the industrial nature of the work sites involved, Occupational Medicine personnel may be potentially exposed to typical industrial hazards and radiation. These hazards are mitigated by the operating entity being visited.

Management issues associated with the OMP include the understanding of the roles and responsibilities of the physicians, nurses, paramedics, EMTs and medical technicians involved in the delivery of care. There are constraints on each category of personnel relative to the level of care which may be delivered. Licensing and certification bodies prescribe the scope of care each can deliver. Failure to maintain compliance with these bodies can result in litigation, civil, or criminal penalties. A malpractice PREMIUM insurance policy must be in effect to mitigate legal exposure to malpractice by health care professionals at the NTS. Failure to maintain this policy could result in costly litigation in the event of a malpractice suite being filed.

4.3.1 Medical Program Management

Latest Revision: 7/30/02

Management must understand the necessary interactions between various health care providers and worker protection teams at DOE/NV site.

Section 3 - Standards:

The necessary and sufficient standards applicable to this work activity is as follows:

Standard	Title
10 CFR 1046	Physical Protection of Security Interests
<i>Note Added by BCR 99-012.</i>	
10 CFR 711, Subpart A	Personnel Assurance Program (PAP), PAP Certification/Recertification, Temporary Removal/Reinstatement, and Revocation of PAP Certification
<i>Note Added by BCR 99-012.</i>	
National Fire Protection Association (NFPA) 1582	Medical Requirements for Fire Fighters
<i>Note Added by BCR 99-012.</i>	
NRS 450.b.	Emergency Medical Services
<i>Note Added by BCR 99-012.</i>	
DOE O 440.1A, Attachment 2, Section 19	Worker Protection Management for DOE Federal and Contractor Employees
<i>Note Added by BCR 99-012.</i>	

Section 4 - Measurement Parameters:

Many health measures, related to occupational or preventative medicine, are interrelated with other disciplines. Therefore, the effectiveness of these measures is not directly attributable to the medical program. It is a result of teamwork among members such as health care providers, safety specialists, industrial hygienists, workers' compensation case management and claims personnel. The occupational medical program plays a part in the overall outcome. Below are examples of universally accepted measures not directly controlled by medical personnel. These measures must be reported to the SOMD:

- CAIRS Data
- ORPS Data
- Claims experience and costs for occupational and non-occupational injuries and illnesses
- Excess exposure levels that exceed PELs
- Return to work program measurements (days away from work or early return)

Below are measurements which are tracked by medical personnel, and must be reported to the SOMD:

- Number and cost of patient visits

4.3.1 *Medical Program Management*

Latest Revision: 7/30/02

- Number and cost of physical exams
- Number and cost of EAP encounters
- Number and cost of Wellness encounters
- Number and outcome of ambulance run reviews
- Number and outcome of medical care reviews

Section 5 - Implementation Considerations:

The prime contractor shall provide the physician responsible medical services.

The base services for occupational medicine, EAP, and emergency medical services are currently implemented. Any change in the scope of work or size of the workforce will mandate expansion of service capability. Such expansion of services may include recruitment, training, and certification of health care providers. Alternatively, these services may be contracted out at an increased cost. A coordinated effort between project planners, project managers and the SOMD is required to facilitate any additional services with minimum implementation impact.

Subcontractors for medical and EAP services for all areas must have provisions in them requiring contractors to comply with the applicable requirements for the locations where they will be conducting work.

Employers and other organizations using any DOE/NV or DOE/YMP facilities will inform the SOMD of the following:

1. The goal of their project
2. The work to be done
3. Pertinent OSHA regulations of other known medical qualifications
4. Their occupational medical program
5. Operational occurrences - specifically:
 - a. All occupational illnesses and injuries occurring at DOE/NV sites
 - b. All absences over 40 consecutive hours, occupational or non-occupational
 - c. All worker deaths, whether work related or not

Section 6 - Work Environment:

Occupational Medical management personnel interact with employees in a clinical setting as well as the workplace environment. This interaction requires close cooperation and coordination with personnel involved in industrial hygiene, health physics, and safety activities.

Section 7 - Uncertainties or Issues:

Budget reductions could result in fewer personnel to carry out required medical programs and noncompliance with federal and state laws and other standards.

The base services for occupational medicine, EAP, and emergency medical services are currently implemented. Any change in the scope of work or size of the workforce will mandate expansion of service capability. Such expansion of services may include recruitment, training, and certification of health care providers. Alternatively, these services may be contracted out at increased cost. A coordinated effort between project planners, project managers and the SOMD is required to facilitate any additional services with minimum implementation impact.

4. 3.1 *Medical Program Management*

Latest Revision: 7/30/02

Section 8 - Training:

In accordance with state law, health care providers must be licensed or certified to practice in the state where they are located. The SOMD must attend DOE specific training and qualify as a Principal Co-investigator for chelating agents. The SOMD must be qualified to function in the role of Medical Director as described in NRS 450.b.

Section 9 - Vulnerabilities:

Failure to provide Occupational Medical oversight, planning, coordination, and implementation may result in noncompliance with these stated standards which in turn may result in poor patient outcomes and negative financial impacts. Failure to establish occupational medicine programs will result in noncompliance with worker protection programs.

4. 3.2 *Occupational Medical Services*

Latest Revision: 7/30/02

Section 1 - Work Activity:

Occupational Medicine Services will be provided at a minimum, during day shift hours Monday through Friday to DOE/ NV-related personnel. Actual physician in-clinic hours will be decided based on competing demands of medical surveillance, clinical medicine, site visits, and other administrative duties. Other health professionals, such as nurses, technicians and paramedics may be utilized to treat and triage according to protocols. Physician support for consultations will be available 24 hours per day, 7 days per week.

Medical Services shall include, at a minimum, the following elements, and shall meet the requirements, and standards, objectives stated herein.

These elements are:

- Medical Records
- Medical Surveillance
- Clinical Medicine
- Employee Assistance Program
- Wellness
- Clinical Waste

Medical Records

Medical records are established and maintained for each employee to provide a complete record of medical care while the employee is assigned. They are required to ensure an accurate record of medical care is maintained and to document and protect a worker's health, and protect the company in the event of litigation or health related injury or illness claims.

Medical records will be maintained in accordance with applicable DOE standards.

Medical Surveillance (MS)

MS shall be provided to workers who are potentially exposed to occupational hazards. Medical personnel interface with Industrial Hygiene and Health Physics personnel who provide employee exposure data and radiation exposure information.

MS is required to protect workers' health through the use of medical evaluation and monitoring of individuals potentially exposed to hazardous substances on the job. Knowledge of the workplace and medical surveillance provides the foundation of Occupational Medicine programs. Periodic visits to work sites are required to enhance knowledge of workplace environments, hazards, and physical requirements.

Clinical Medicine

Activities under clinical medicine shall include the daily provision of:

- Assessment, diagnosis, treatment and referral (if necessary) for occupational injuries/illnesses and non-occupational injuries/illnesses and "first-visit" care for non-occupational injuries/illnesses, including initial stabilization interventions in acute medical emergencies.
- Documentation for notification of occupational illnesses/injuries to safety, industrial hygiene and risk management offices to fulfill requirements for Worker's Compensation, OSHA, and DOE's Computerized Accident and Injury Reporting System (CAIRS) reporting.
- Specimen collection and administrative support for MS, as required, substance abuse programs, of employees involved in safety sensitive positions, such as commercial drivers and Personal Assurance Program personnel.
- Return to Work process: All employees that are out of work for 40 consecutive hours or more due to illness or injury are required to process through the OMP prior to returning to work. All such cases will be reported to the SOMD.

Employee Assistance Program (EAP)

EAP personnel provide confidential assistance in the form of counseling and referral for employees with alcohol and drug abuse problems, family/marital conflicts, and interpersonal/social relationship problems that may interfere with the employee's ability to function on the job. The work activity for the EAP is centered on the identification and resolution of productivity problems associated with employees potentially impaired by mental health issues and work concerns which may affect employee performance and job safety.

There are no federal or state regulations requiring an employer to provide EAP services to its employees. It is a common industry and business practice to provide these services as either a part of an occupational medicine program or a benefit managed by the Human Resource activity.

A company with a formal OMP has an advantage if it offers such a service as part of its "whole person" concept of preventive medicine. A positive state of mental health is an important medical component and is recognized industry-wide as necessary for proper job performance.

Wellness Program

As with the EAP service, there are no federal or state statutes requiring a Wellness Program. However, the mission of the OMP is to protect the worker's health. Prevention is the key element in occupational or preventive medicine. Wellness applies preventive medical measures toward the maintenance of the physical health of employees through health promotion and education. Wellness is a common component of medical programs nationwide. Hospitals, managed care programs, and major corporations use the preventive nature of Wellness activities to improve health, reduce costs, and increase productivity. They have become necessary to medical programs today.

This worksite-based Wellness addresses health issues with emphasis on lifestyle-related risk factors and includes

4.3.2 Occupational Medical Services

Latest Revision: 7/30/02

assessment, promotion, education, counseling, and behavior modification of lifestyle practices.

Clinical Waste

Medical personnel have responsibility for the disposal of medical waste and hazardous waste generated and collected at their facilities. Medical waste containers are collected by a state licensed hazardous waste disposal contractor who disposes of them. Hazardous waste is accumulated in accordance with state and federal regulations and disposed of at approved TSDFs through the BN Waste Management organization. [The standards applicable to this work element are found in the 4.5, Environmental Protection Program Work Activity, and the 2.1.3, Hazardous Waste Work Activity.]

Section 2 - Hazards and Management Issues:

Due to the industrial nature of the work sites involved, OMS personnel may be potentially exposed to hazards such as chemicals, medical wastes, and biohazards (bloodborne pathogens). Also, due to exposure to bio-hazards during activities such as tending wounds and drawing blood, health care providers must wear personal protective equipment and practice universal precaution procedures when dealing with any type of body fluid.

Management issues associated with the OMS include the understanding of the roles and responsibilities of the physicians, nurses, paramedics, EMTs, and medical technicians involved in the delivery of care. There are constraints on each category of personnel relative to the level of care which may be delivered. Licensing and certification bodies prescribe the scope of care each can deliver. Failure to maintain compliance can result in litigation, civil, or criminal penalties. A malpractice insurance policy must be in effect to mitigate legal exposure to malpractice by health care professionals providing services to DOE/NV-related personnel. Failure to maintain this policy could result in costly litigation in the event of a malpractice suite being filed.

Management of all user groups must understand the necessary interactions between various health care providers and worker protection teams at DOE/NV sites.

Section 3 - Standards:

Any other OSHA or ANSI standards that the SOMD may deem applicable may be applicable to a given project.

Standard	Title
10 CFR 711, Subpart B	Medical Assessments for PAP Certification Recertification
<i>Note Added by BCR 99-010.</i>	
<i>Clinical Medicine</i>	
29 CFR 1910.1001 and 29 CFR 1926.1101	Asbestos
<i>Note Added by BCR 99-010.</i>	
<i>Medical Surveillance</i>	
29 CFR 1910.1020 and 29 CFR 1926.33	Access to Employee Exposure and Medical Records

4. 3.2 Occupational Medical Services

Latest Revision: 7/30/02

Note Added by BCR 99-010.

Medical Surveillance, Medical Records

29 CFR 1910.1025 and 29 CFR 1926.62 Lead

Note Added by BCR 99-010.

Medical Surveillance

29 CFR 1910.1030 Blood Borne Pathogens

Note Added by BCR 99-010.

Medical Surveillance, Clinical Medicine, Clinical Waste

29 CFR 1910.120 and 29 CFR 1926.65 Hazardous Waste Operations and Emergency Response

Note Added by BCR 99-010.

Medical Surveillance, Clinical Medicine

29 CFR 1910.134 and 29 CFR 1926.103 Respiratory Protection

Note Added by BCR 99-010.

Medical Surveillance

29 CFR 1910.48 and 29 CFR 1926.1148 Formaldehyde

Note Added by BCR 99-010.

Medical Surveillance

29 CFR 1910.95 and 29 CFR 1926.52 Occupational Noise Exposure

Note Added by BCR 99-010.

Medical Surveillance

ANSI Z136.1 Safe Use of Lasers

Note Added by BCR 99-010.

Medical Surveillance Program

NFPA Standard 1582 Fire Department Occupational Safety & Health Program, Physical Fitness Requirement

Note Added by BCR 99-010.

Medical Surveillance

29 CFR 1910.132 Personal Protective Equipment, General Requirements

Note Added by BCR 99-010.

Medical Surveillance, Clinical Medicine, Clinical Waste

4. 3.2 *Occupational Medical Services*

Latest Revision: 7/30/02

DOE O 440.1A

"Occupational Medical," Attachment 2, Section 19

Note Added by BCR 99-010.

Occupational Medical Program, Medical Surveillance, Clinical Medicine

Section 4 - Measurement Parameters:

Many health measures, related to occupational or preventive medicine, are interrelated with other disciplines. Therefore, the effectiveness of these measures is not directly attributable to the medical program. It is a result of teamwork among members such as physicians, safety specialists, industrial hygienists, workers' compensation case management and claims personnel. The occupational medical program plays a part in the overall outcome.

Below are measurements which are tracked by medical personnel, and must be reported to the SOMD.

- Number and cost of patient visits
- Number and cost of physical exams
- Number and cost of EAP encounters
- Number and cost of Wellness encounters
- Number and outcome of ambulance run reviews
- Number and outcome of medical care reviews
- Excess exposure levels that exceed PELs
- Return to work program measures (days away from work or early return)

Section 5 - Implementation Considerations:

The base services for occupational medicine, EAP, and emergency medical services are currently implemented. Any change in the scope of work or size of the workforce will mandate expansion of service capability. Such expansion of services may include recruitment, training, and certification of health care providers. Alternatively, these services may be contracted out at increases cost. A coordination effort between project planners, project managers and the SOMD is required to facilitate any additional services with minimum implementation impact.

Subcontracts for medical and EAP services for outlying areas must have provisions in them requiring contractors to comply with the applicable requirements for the locations where they will be conducting work.

Employers and other organizations using any DOE/NV or DOE/YMP facilities will inform the SOMD of the following:

1. The goal of their project
2. The work to be done
3. Pertinent OSHA regulations or other known medical qualifications
4. Their occupational medical program
 - a. All occupational illness and injuries occurring at DOE/NV sites
 - b. All substances over 40 consecutive hours, occupational or non-occupational
 - c. All worker deaths, whether work related or not

Section 6 - Work Environment:

Occupational physicians and other health care personnel interact with employees in a clinical setting as well as the workplace environment. This interaction requires close cooperation and coordination with personnel involved in industrial hygiene, health physics, and safety activities.

Section 7 - Uncertainties or Issues:

Budget reductions could result in fewer personnel to carry out required medical programs resulting in noncompliance with federal and state laws and other standards.

The base services for occupational medicine, EAP, and emergency medical services are currently implemented. Any change in the scope of work or size of the workforce will mandate expansion of service capability. Such expansion services may include recruitment, training, and certification of health care providers. Alternatively these services may be contracted out at increased cost. A coordinated effort between project planners, project managers and the SOMD is required to facilitate any additional services with minimum implementation impact.

Section 8 - Training:

In accordance with state law, health care providers must be licensed or certified to practice in the state where they are located.

Section 9 - Vulnerabilities:

Failure to provide Occupational Medical oversight, planning, coordination, and implementation may result in noncompliance with these standards which in turn may result in poor patient outcomes and negative financial impacts. Failure to establish occupational medicine programs will result in noncompliance with worker protection programs.

Section 1 - Work Activity:

The Radiation Protection Program at the Nevada Test Site is designed to protect occupational workers from unnecessary exposure to ionizing radiation using the principle of As Low As Reasonably Achievable (ALARA).

Elements of this program are: Exposure Control, Monitoring, Records, Training, and Radioactive Materials Control. Each activity is explained below:

Exposure Control: Radiation exposure is controlled such that radiation exposures are well below regulatory limits. This is accomplished by reducing time spent in radiation areas, controlling distance to a radiation source, by shielding of the radiation source, and by access/entry control to radiological areas. Exposure control is accomplished through the use of signs and barricades, locked entrance ways, conspicuous visual/audible alarms, administrative procedures, engineering and design processes, the use of Radiological Work Permits (RWPs), and by direct surveillance.

Monitoring: This activity identifies the radiological hazards in the workplace. Workplace monitoring is accomplished by conducting radiation and contamination surveys, by use of constant air monitoring systems (CAMS) as applicable, air sampling, soil sampling, water sampling, and area dosimetry. Personnel monitoring is accomplished by performing radiation surveys, by use of personnel dosimetry, and by implementation of the internal dosimetry program.

Posting, Demarcation, and Labeling are also included in this activity. Radiological areas and radioactive materials are posted and labeled. Radiological areas are posted to alert personnel to the presence of external radiation or contamination.

Radiation protection instrumentation is an element of the monitoring activity. This activity involves choosing the right instruments for the expected radiation, maintenance and calibration, and field checks. The maintenance and calibration of these instruments will be discussed by the infrastructure Standards Identification Team (SIT) in WBS 3.10.

Records: A radiological records program is maintained. These records are used to track doses received by personnel, provide personnel exposure histories, determine work area histories, and provide other radiological information that might be needed to assess situations. Dose reports are also made available to workers to inform them of their exposure. Radiological performance goals and indicators are maintained to determine program performance and trends.

Training: Personnel are trained on the hazards of radiation up to the appropriate level of radiological hazards to which they are expected to be exposed. Radiological safety training instructs personnel on the hazards of radiation and what to do in radiological work situations. The levels of radiation training received are used to determine access eligibility to the different levels of radiological areas.

Radioactive Materials Control: This activity includes the survey and release of equipment and material from radiological areas, tracking of stored radioactive material and equipment, the decontamination of contaminated

equipment and material, and source accountability.

Radiation protection of the environment will be discussed in WBS 4.9, Environmental Monitoring Program.

Section 2 - Hazards and Management Issues:

Hazards associated with the Radiation Protection Program include exceeding control levels and dose limits.

Management issues include:

- Failure to properly implement the Radiation Protection Program.
- Failure to ensure that the Radiation Protection and ALARA programs are effective.

Implementation of the Radiation Protection Program is a line management responsibility. Managers are expected to hold workers and their supervisors accountable for Radiological Control performance.

The Radiological Control Organization provides relevant support to line management and workers and is independent of line organizational elements.

Management commitment and support are demonstrated by allocating sufficient resources including personnel and providing training to ensure workers are qualified for duties including radiological work.

Section 3 - Standards:

A comparison of 10 CFR 20 and 10 CFR 835 shows similarity of content and program objectives. 10 CFR 20 applies to agencies and programs requiring a Nuclear Regulatory Commission (NRC) license. Paragraph 20.1001 of 10 CFR 20 states that this part applies to NRC licensees. DOE/NV is not an NRC licensee. 10 CFR 835 is implicit in its application to DOE facilities and programs. 835.1(b) exempts all NRC licensed activities from this rule. The Price-Anderson Act requires that all Government Contractors obey the federal rules or be subject to criminal penalties. Therefore, these rules are considered necessary. Since 10 CFR 835 is similar in content to the nuclear industry standard of 10 CFR 20, it should be considered sufficient for its intended application to DOE activities.

Standard	Title
10 CFR 835	Radiation Protection for Occupational Workers
<i>Note BCR 1998-002</i>	
<i>This Federal Rule establishes radiation protection standards, limits, and programs for protecting individuals from ionizing radiation at DOE facilities.</i>	

Note BCR 1998-002

Paragraph 6e only. This DOE Notice establishes requirements for the radiation standards, limits and programs for the control of sealed radioactive sources at DOE facilities.

4. 4 ***Radiation Protection***

Latest Revision: 3/17/04

PAD:DR-4014

Request for Information for Nevada Test Site Nuclear Facilities -
Assurance of Continued Testing of High Efficient Particulate Air (HEPA)
Filters at National Nuclear Security Administration Facilities

Note *NOTE: Institutionalizes in NSO contracts, DOE's commitments to the DNFSB regarding QA for HEPA filters. Added by BCR 2004-003, 3/17/04. Applies only to BN.*

DOE HDBK-1169-2003

DOE Handbook Nuclear Air Cleaning Handbook, Chapter 8, Testing

Note *NOTE: Used to fulfill DOE's commitments to the DNFSB regarding QA for HEPA filters, specified in NNSA/NSO letter PAD:DR-4014. Added by BCR 2004-003, 3/17/04. Applies only to BN.*

Section 4 - Measurement Parameters:

- Attainment of ALARA performance goals.

- Radiological Occurrences.

- Contaminated surface area.

- Radiation Protection cost per number of dosimeters issued.

Section 5 - Implementation Considerations:

Specific articles of DOE/NV10630-59, NV/YMP RADIOLOGICAL CONTROL MANUAL are used in the site-wide Radiation Protection Program (RPP) to implement requirements of 10 CFR 835. The Department of Energy Laboratory Accreditation Program (DOELAP) is used to certify the dosimetry laboratory as required by 10 CFR 835. 10 CFR 835 and the DOE/NV 10630-59, NV/YMP Radiological Control Manual have already been implemented. Since these standards have been implemented, there is no adverse impact on implementation. However, some of the requirements of DOE/NV 10630-59 are excessive and costly. DOE/NV 10630-59 should be reevaluated and revised to cut excessive requirements and cost.

Any DOE activity requiring an NRC license is exempted from the standards set by 10 CFR 835. However, these activities would be required to adhere to the standards set in 10 CFR 20. Any subcontractor coming on the site would be required to adhere to the standards set in 10 CFR 835 unless it operates under an NRC license. If operating under an NRC license, the subcontractor would continue to follow the standards set forth in 10 CFR 20 while at a DOE/NV facility.

Section 6 - Work Environment:

Work is conducted both indoors and out. Work can be conducted in inclement weather and in a variety of industrial settings.

Section 7 - Uncertainties or Issues:

None

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

The centralized training organization does not have a sufficient number of qualified instructors.

If any part of the Radiation Protection Program fails, both Civil and Criminal penalties can be assessed.

Section 1 - Work Activity:

This document identifies the environmental standards that are applicable to the entire Work Smart Standards set of activities. The necessary and sufficient set of environmental standards for each project or activity must be determined during the planning phases. Implementation of environmental standards is specified by each contractor/organization and for NTS-wide requirements by the M&O Contractor.

The Environmental Protection Program of NNSA/NSO-managed facilities and sites at the NTS, Las Vegas offices, and satellite locations in California, New Mexico, and Maryland is based on Federal environmental protection regulations, state and local municipal codes, and a DOE directive. Specific requirements are referenced in company procedures developed in accordance with quality assurance standards, and are integrated into the work processes. To assure compliance with the standards listed in Section 3, environmental professionals provide regulatory support by participating in planning, permitting, and operations. Oversight is done as a component of a company's Quality Assurance Program. Each contractor/organization has an Environmental Management System (EMS) assuring the integration of environmental requirements into management and work control systems, as a part of the Integrated Safety Management System (ISMS).

This work activity consists of:

Project/Activity Planning - including identifying the applicable set of environmental standards for each project/activity, evaluating projects against NEPA criteria, preparing NEPA checklists and NEPA documents, providing information to assist in the preparation of NEPA documents, and reviewing, approving, and tracking environmental documents.

Permitting - including preparing applications and reports, and keeping records relating to environmental permits for regulated wastes, waste water, drinking water, air quality, and hazardous material storage.

Monitoring and Reporting - of data and other information relating to permits and other regulatory limits. Examples include hazardous substance inventory and Nevada Fire Marshal Report, annual emissions inventory, monitoring and reporting required under permits. [Note: Radiological Monitoring and Ecological Monitoring are addressed under WSS WBS 4.9.1 and 4.9.2, respectively.]

Assessment Program - planning, conduct and documentation of conformance to environmental requirements and permit conditions covering facility-specific and programmatic environmental standards, and implementation.

In performance of the activities described above, the work activity may interface with these work activities:

- 1.1.5 Training
- 1.3.1 Procurement
- 1.5.1 Records Management & Document Control
- 1.8 Administrative Systems and Controls
- 2.1.2 PCBs
- 2.1.3 Hazardous Waste

4.5 *Environmental Protection Program*

Latest Revision: 5/14/04

- 2.1.4 Solid Waste
- 2.1.8 Waste Explosives Disposal
- 2.2 Environmental Restoration
- 2.7.1 Design Engineering
- 2.12 Hazard Assessment
- 3.4 Facility Maintenance
- 3.8.2 Water and Steam
- 3.8.3 Sewer
- 4.2.1 Occupational Safety & Health Programs
- 4.2.2 Industrial Hygiene
- 4.3 Radiation Protection
- 4.7 Quality Program
- 4.9.1 Environmental Radiological Monitoring and Compliance
- 4.9.2 Ecological Monitoring and Compliance

Section 2 - Hazards and Management Issues:

The most significant hazard associated with the Environmental Protection Program is the potential for damage to the environment when deficient conditions are not properly identified, controlled and/or mitigated. NNSA/NSO activities, due to their high public profile and NNSA/NSO's commitment to regulatory compliance, cannot operate under substandard criteria.

Management issues relate to the definition of roles within each organization. A defined roles and responsibilities structure must be designed and maintained. Management adherence to the EMS could provide this structure to help eliminate gaps in the program and avoid fines and penalties associated with non-compliance.

Section 3 - Standards:

The necessary and sufficient standards which establish the basic authorities for developing an effective environmental protection program are listed below. These standards will be used as the bases for assessments and the provision of regulatory support activities. This list may not be inclusive because a complete regulatory review is performed for each project or operation (usually prior to initiation) to identify the applicable local, state, and federal laws. This set of standards is considered the "law of the land," and is necessary for the State of Nevada. It is expected to be supplemented by analogous State and local codes in other DOE/NV-managed locations.

Standard	Title
40 CFR	Environment
<i>Note</i>	
Andrews Air Force Base Plans/Instructions	
<i>Note</i>	
California Code of Regulations	
<i>Note</i>	
City of Livermore Municipal Code	

4. 5 *Environmental Protection Program*

Latest Revision: 5/14/04

Note

City of North Las Vegas Municipal Code

Note

Clark County Municipal Code

Note

DOE O 450.1, CRD Environmental Protection Program

Note

Los Alamos County Code

Note

Nellis Air Force Base Plans/Instructions

Note

Nevada Administrative Code

Note

New Mexico Administrative Code

Note

Santa Barbara County Code

Note

Section 4 - Measurement Parameters:

- The number of unpermitted releases or other minor environmental violations

- Recurrences of preventable minor environmental violations

- On-time submittal of reports and other deliverables

Section 5 - Implementation Considerations:

The Environmental Protection Program is a general framework for maintaining environmental compliance within NNSA/NSO. A regulatory analysis during the planning phase determines the relevant set of environmental rules and regulations, including state and local codes, for each project or activity. Terms and conditions of permits could impose additional requirements not mandated by regulations.

The Environmental Protection Program responsibilities do not lie within one organization, but are assigned throughout each contractor/organization.

Section 6 - Work Environment:

Work is conducted in office, construction, and other field settings.

Section 7 - Uncertainties or Issues:

A decision has not been made on whether to become certified in accordance with the ISO 14001 standards for Environmental Management Systems (EMS). This certification would enhance the credibility of each contractor/organization environmental program. Attaining and maintaining certification would require additional resources and funding.

Section 8 - Training:

Environmental professionals and others involved in certain aspects of the Environmental Protection Program must obtain training listed in regulations and permits. Examples of such training include hazardous waste site general worker training and water distribution operator certification training.

Section 9 - Vulnerabilities:

Failure to comply with the requirements of the laws, regulations, or permit conditions could result in damage to the environment, fines, penalties, increased regulatory scrutiny, and negative publicity for NNSA/NSO and its contractors.

Section 1 - Work Activity:

By contract with the Department of Energy, the mission of the security protective force at DOE/NV is to perform the following functions: protection of security areas against unauthorized access; staffing fixed security stations; patrolling designated areas and points of security interests; escorting personnel or materials; checking security repositories and areas during non-working hours; apprehending unauthorized persons or vehicles in security or controlled access areas; protecting special nuclear material within the NTS boundaries; preventing through the use of force as necessary, access to security areas or to classified matter and theft or destruction of classified matter, special nuclear material, or government property; furnishing protective force personnel for related security duties, such as destruction of classified waste, staffing a central security communications center, preparing required orders, instructions and reports in connection with administration of security functions; provide test event activities which include air and ground sweeps, area muster, manning screening stations and establishing designated roadblocks; and operating primary and secondary monitoring and emergency control centers. These activities and related hazards are addressed fully in WBS 3.7, Industrial Security.

In carrying out these responsibilities, it is not necessary that the security personnel be armed unless special nuclear materials or related information is involved. Firearms currently in inventory include handguns, machine guns, sub-machine guns, rifles and grenade launchers. Of utmost importance is to ensure that armed personnel use their firearm in a safe manner. Security personnel must qualify with assigned weapons periodically and demonstrate proficiency through performance tests. During routine work activities, security personnel are required to handle, load and unload assigned firearms. During training activities, security personnel are required to handle, load/unload and fire their assigned weapons. Training is conducted both indoors (shooting house) and outdoors on live-fire ranges. In addition, the Armorer and Assistant Armorer are required to make minor repairs to firearms and conduct functional tests to ensure operability. All armed employees are required to clean firearms after use.

Section 2 - Hazards and Management Issues:

Specific hazards associated with activities involving firearms include:

- serious injury or death as a result of unauthorized (accidental) discharges.
- potential serious injury resulting from malfunctioning weapons or ammunition.

Section 3 - Standards:

It is recognized there are other potential hazards associated with firearms activities that must be mitigated through the application of appropriate standards. These include hazards such as potential lead exposure, excessive noise, exposure to chemicals used for cleaning weapons, and potential environmental contamination from lead usage on live-fire ranges. These hazards are mitigated through compliance with other applicable program requirements developed through the Necessary and Sufficient process.

Standard	Title
DOE M 473.2-1	Firearms Qualification Courses Manual
<i>Note Added by Change Request 2000-010, 08/22/2000.</i>	
DOE-STD-1091-96	Firearms Safety

4. 6 *Firearms Safety*

Latest Revision: 8/8/02

Note Added by BCR 2000-010.

DOE O 440.1A, CRD, Attachment 2,
Paragraph 16

Worker Protection Management for DOE Federal and Contractor
Employees - Firearms Safety

Note Revised by Change Request 2000-010, 8/22/2000. Standards considered necessary and sufficient for an effective firearms safety program. Consistent with practices of law enforcement agencies.

Section 4 - Measurement Parameters:

- Number of hours worked without an unauthorized discharge of a firearm.
- Number of weapons training hours without a range safety violation.

Section 5 - Implementation Considerations:

The applicable sections of DOE Order 440.1 (as referenced above) will be utilized as the standards for firearms safety. DOE Standard 1091-96 (Firearms Safety Protection) is utilized as the implementation document. All standards are currently implemented.

Section 6 - Work Environment:

Armed security personnel are required to travel over unimproved terrain throughout the NTS and may have to confront hostile members of the public who enter the NTS or other DOE or contractor facilities illegally.

Section 7 - Uncertainties or Issues:

Since DOE-STD-1091-96, Firearm Safety, will be utilized to implement standards for the contractor, any armed personnel authorized to use the firing range will be required to comply with the same standards.

Section 8 - Training:

When new protective force employees are hired, they are trained to ensure they can perform assigned work activities with firearms in a safe manner. Experience has shown that initial and periodic (refresher) training is required to ensure familiarization proficiency is maintained and safety rules are continually reinforced. Initial and subsequent firearms training is provided locally by WSI Certified Firearms Instructors. Advanced firearms training (as listed below) is normally accomplished at the DOE Central Training Academy (CTA):

- Advanced weapons training for certifications of firearms instructors.
- Advanced weapons training for the Armorer and Assistant Armorer. Must be certified by CTA and successfully complete a factory authorized or military approved training course for each firearm available for duty on a site. (Armorer and Assistant Armorer must be recertified every two years).

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

The activities associated with the Quality Program consist of 2 functions: the process/work activities and responsibilities performed by all personnel; and those support activities performed by a performance assurance group or organization designated by management to perform specific oversight functions.

Process/Work Activities (all personnel) - Functional organizations within DOE/NV contractors and subcontractors are responsible for evaluating their work processes using a systematic risk-based approach to identify and implement only the necessary requirements of the Quality Program. Personnel involved in any manner of direct or indirect support to the performance of organization responsibilities must individually ensure the quality of their work. The Quality Program applies to all work activities and will be implemented by employees in a graded manner based on the risk of those operations.

Performance Assurance Support Activities - The management-designated performance assurance group or organization is responsible for the following:

- Developing the basis for the Quality Program and coordinating the development of policies, procedures, and other implementing documents and management tools, e.g., performance indicators, deficiency tracking and trending systems, data analysis processes,
- Conducting independent oversight, compliance, and management assessments,
- Quality Program implementation support for DOE/NV-managed operations.

Section 2 - Hazards and Management Issues:

Hazards - Because the Quality Program is a management system that enhances aspects of work at the NV operations complex, an ineffective program could result in preventable process failures. An ineffective program can result from many different reasons, e.g., lack of commitment from executive management, failure of line management to implement the program, a less than fully developed program, or a program that does not lend itself to the needs of the workforce. An effective Quality Program based on the referenced standards will mitigate potential hazards with respect to worker and public health and safety, and potential criminal and/or civil actions initiated by Federal or State regulators.

Management Issues - Implementation of the selected standard will ensure that the necessary level of controls are applied to the work activities and projects based on the associated risk. Another management issue associated with the Quality Program is the following: without full commitment and support of the Quality Program by management and employees, criminal and civil liabilities may be incurred for Non-Compliance of some State and Federal requirements.

Section 3 - Standards:

Standard	Title
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4. 7 *Quality Program*

Latest Revision: 8/12/02

10 CFR 830.120, Subpart A

Quality Assurance Requirements for Nuclear Facilities

Note *Added by BCR 2001-013. Applicable to activities at nuclear facilities only.*

DOE O 414.1A Chg 1, CRD

Quality Assurance

Note *Added by Change Request 2001-013, 5/16/01. Changed by BCR-2001-015, dated 9/5/2001. Also added to B2 and B3.*

Section 4 - Measurement Parameters:

- Effectiveness of the Quality Program, measured by survey of Internal and External Customers and analysis of the following:
- Number of Deficiencies Identified during Independent Assessments,
- Number of Positive Findings Identified during Assessments,
- Trending and Analysis of oversight activities resulting in a lower number of process failures and conversely a higher number of process improvements. Improvement is measured as a ratio of positive and negative findings of like conditions,
- Trending of State and Federal Notice of Alleged Violations.

Section 5 - Implementation Considerations:

In complying with the requirements established in the aforementioned standards, Bechtel Nevada has developed the Performance Assurance Management Plan and WSI has prepared a Quality Assurance Plan. These documents provide systematic risk-based application of management controls on projects, facilities, and programs which will provide confidence that the necessary and sufficient resources are applied to the work activities.

The three previous Nevada Test Site contractors had approved and fully implemented DOE Order 5700.6C Quality Programs, and one contractor had an approved and fully implemented 10 CFR 830.120 Quality Program; therefore, no additional implementation considerations are anticipated short of developing consolidated project specific implementing documents.

Because of past implementation practices at NV Operations, the benefits of the graded approach were not fully realized. It is anticipated that by using the graded approach provided in DOE Order 5700.6C to its fullest potential, that monetary savings will be observed at the NV Operations complex. By implementing the necessary requirements based on risk, many operations may witness a cost savings because of fewer restrictive and unnecessary administrative burdens, or the application of tighter controls which will mitigate potential fines levied for noncompliance with State and Federal statutes.

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

Since DOE Standard 1091-95 will be utilized to implement standards for the contractor. Any armed personnel authorized to use the firing range will be required to comply with the same standards.

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

Without an effective evaluation of the risks associated with a process, project, or facility, there is the potential to be excessively rigorous or inordinately unconstrained in applying the Quality requirements. This could cause the expenditure of unnecessary resources, affect public opinion because of regulatory fines, future funding, policy decisions, or drive the cost of business beyond the competitive range, which could affect the attraction to the NV complex of outside business.

If the future tendency is to move toward another industry standard, the ability to implement the Quality Program in a common sense approach (based on the risk of the operations) will be gone. Because of the unique operations and large infrastructure of the NV operations, implementation of an another industry standard would require rigid, blind compliance and drive the cost of doing business upward, a complete departure from one of our primary goals.

Section 1 - Work Activity:

Emergency Management (EM) is an institutional program and system designed to ensure that an effective emergency response organization and capability is developed and maintained to protect the safety and health of workers and the general public, limit any impact on the environment, minimize equipment and facility damage, and reduce facility down time in the event of a natural or technological emergency, i.e., an Operational Emergency Base Program. In addition, an Operational Hazardous Material Program must be added to the Operational Emergency Base Program due to the nature of operations of certain facilities at some National Nuclear Security Administration/Nevada Site Office (NNSA/NSO) sites. This is particularly true for NTS facilities such as the locations where special nuclear materials are used in experiments (DAF and the U1a Complex) and locations where significant quantities of hazardous chemicals are used in experiments at the Hazardous Material Spill Center. The Emergency Management Program and System (EMPS) is accomplished through the development of necessary EM plans and procedures that implement applicable laws, regulations, and DOE requirements, commensurate with the type of operations conducted and the risks and hazards of associated operational activities. The implementation and maintenance of an institutional EMPS is then supported by the development and maintenance of EM readiness assurance, training and drill, and exercise programs. Under these concepts, NNSA/NSO is required to develop and maintain a baseline EMPS to support operations conducted under their cognizance at the Nevada Test Site, North Las Vegas Facilities and the Remote Sensing Laboratory on Nellis Air Force Base in southern Nevada and at Andrews Air Force Base, MD; facilities in the Santa Barbara area, CA; and operations in Los Alamos, NM.

- The following provides a summary of the principle programmatic elements and associated work activities that are required to develop, implement, and maintain a contemporary and baseline EMPS under current Federal, State, and local laws, regulations, and other DOE management requirements:

- Emergency planning activities involving the identification, documentation, and analysis of credible operational risks and hazards; the mitigation of identified hazards and risks to the extent practical; and the development and maintenance of comprehensive EM plans, procedures, programs, systems, and other supporting interfaces and documents. Depending on facility/operating conditions, this may include the need to establish and maintain a quantitative hazards assessment, which will be used to define the provisions of the Operational Emergency Hazardous Materials Program to ensure the program is commensurate with the hazards identified. Such hazard assessments are required if the hazard survey identifies hazardous materials in quantities exceeds the lower of the Threshold Quantities listed in 29 CFR 1910.119 or 40 CFR 68.130; Threshold Planning Quantities, listed in 40 CFR 355; or quantities listed in 10 CFR 30.70 for radio nuclides. These assessments provide the basis for establishing an EMPS using the DOE graded or tailored approach to controls based on the risk of potentially adverse consequences.

- Emergency preparedness activities involving the identification, acquisition, and maintenance of sufficient funding and resources for the management and administration of the EMPS. This includes the development and maintenance of an organizational infrastructure of emergency facilities, communications systems, specialized emergency response organizations, and the following supporting elements:

- · · Emergency readiness assurance activities involving the conduct and documentation of all EMPS assessments, appraisals, evaluations, and lessons learned to ensure that established EM plans, procedures, programs, and

systems are adequate, and that funding and resources are sufficient to implement, improve, and maintain an effective EMPS. These activities also include the tracking and correction of any identified deficiencies to ensure the continued maintenance of a satisfactory compliance status.

- · · Development and maintenance of an integrated EM Training Program that provides the appropriate level of training for general employees, supervisors, managers, and specialized emergency response organization personnel, units, and teams.

- · · Development and maintenance of an integrated EM Drill and Exercise Program that provides performance based training activities for general employees, supervisors, managers, and key emergency response organization personnel, units, and specialized teams. This Program is designed primarily to provide for the development and maintenance of an effective employee and organizational emergency response capability. The Program also provides a mechanism by which to validate and evaluate the effectiveness of the EM Training Program, as well as organizational EM plans, procedures, systems, and emergency response organizations.

- · · Emergency response activities involving the immediate and situation dependent deployment, command, and control of emergency response organizations and operations necessary to mitigate and recover from the consequences of a natural or technological emergency.

- · · Support deployment of national response assets at the request of other federal agencies.

Section 2 - Hazards and Management Issues:

The credible hazards associated with the work activities for the management and administration of the NNSA/NSO EMPS under most circumstances are limited to those normally accepted without hesitation by private industry and the general public. In addition, credible hazards are also present at some facilities/operations where quantities of hazardous materials and/or radionuclides exceed the threshold quantities specified in federal regulations.

In addition, there are credible and significant risks and liabilities associated with a failure to develop and maintain a viable and effective EMPS in accordance with applicable industry standards and practices:

- The failure to develop an effective Operational Emergency HAZMAT Program for the NTS could leave the NNSA/NSO and associated organizations unprepared to effectively respond to natural or technological emergencies, resulting in the unnecessary potential for the loss of life, property, or environmental damage.

- An ineffective response to an emergency of any type or scale can pose a significantly higher risk for litigation, fines, and/or increased recovery costs as a result. Decisions in the courts continue to show a trend of placing increased liability on government and the commercial business sector for damages incurred as the result of natural disasters or technological emergencies. This trend suggests that government and business will continue to be held accountable if workers, the general public, or the environment are seriously affected by the consequences of a disaster or emergency, particularly in cases where the responsible organization was not adequately prepared or did not respond properly.

- Consideration must also be given to the fact that public and political concerns and sensitivities will continue to

grow regarding government or private sector operations involving the manufacture, handling, use, storage, transportation, or disposal of hazardous chemical or radioactive materials. These factors will continue to require that the organizations responsible for these types of operations demonstrate a responsible attitude and compliance with applicable laws, regulations, and ordinances in ensuring the safety and health of workers, the general public, and the protection of the environment. This includes the maintenance of an effective emergency response organization, system, and capability to lessen, mitigate, and recover from the consequences of an emergency involving these hazardous materials.

· The failure to develop and maintain a credible and effective Operational Emergency HAZMAT Program for the NTS could also diminish the suitability and readiness of NNSA/NSO sites and facilities to conduct new and diverse business lines and missions.

Management Issues:

· BN, as the Management and Operating contractor, by implementing the NNSA/NSO Emergency Management Program, benefits NNSA/NSO complex employees, all other contractors and subcontractors and users and the general public surrounding the site.

· In recognition that some of the NNSA/NSO facilities and operations are located in local communities (Las Vegas and Santa Barbara, etc.) or on certain Air Force Bases, the NNSA/NSO EMPS must properly interface with local community emergency management systems and Air Force Base systems.

· In recognition of the national response capabilities maintained by NNSA/NSO, the EMPS must provide capabilities to support deployment of national response assets when requested by other federal agencies.

Section 3 - Standards:

In general, the EM programs and systems that are developed by private industry are based strictly on applicable federal, State, or local regulations, laws, and ordinances; and are implemented only to the extent necessary to satisfy mandatory requirements. The private sector relies almost entirely upon intrinsic organizational safety and engineering programs to reduce their operational risks, hazards, and liabilities. The emergency response organizations and capabilities developed are often provided by federal, State, and local government agencies to mitigate and recover from the consequences of any natural or technological emergency. In addition, the DOE/NV EMP must be capable of supporting unique capabilities due to remote locations, the nature of DOE/NV facilities/operations, deployment support for national response assets, and other management issues.

Standard

Title

18 CFR 12.20

Federal Energy Regulation Commission Requirements For Emergency Plans To Protect The Health And Safety Of Members Of The Public Upstream And Downstream Of Water Projects (Dams)

Note *Operational Emergency Base Program*

29 CFR 1910.119 or 40 CFR 68.130; 40
CFR 355 or 10 CFR 30.72

Regulatory Threshold Quantities For Hazardous Materials And
Radionuclides

4. 8 *Emergency Management Program and System*

Latest Revision: 11/30/04

Note *Operational Emergency Base Program
Operational Emergency Hazardous Material Program*

29 CFR 1910.38 and CFR 1910.165 OSHA Requirements for Employee Evacuation Plans and Notification Systems

Note *Operational Emergency Base Program*

40 CFR 100-129 EPA Requirements Implementing The Clean Water Act Through The National Pollution Discharge Elimination System

Note *Operational Emergency Base Program
Of particular note are requirements for contingency planning for oil spills through the 40 CFR 112 series, which mandates preparations of spill prevention controls and countermeasure plans.*

40 CFR 116 and 117 EPA Requirements For Limiting Discharges Of Hazardous Chemicals Through The NPDES Permit Process

Note *Operational Emergency Hazardous Material Program*

40 CFR 141-142 EPA Requirements Implementing The Provisions Of The Safe Drinking Water Act

Note *Operational Emergency Base Program*

40 CFR 260 and 265 EPA Regulations Regarding Emergency Planning For Hazardous Material Waste Sites

Note *Operational Emergency Hazardous Material Program
EPA Regulations Regarding Emergency Planning For Hazardous Material Waste Sites (may be implemented at a part of RCRA, Part B, permit process)*

40 CFR 68 Chemical Accident Prevention Provisions

Note *Operational Emergency Hazardous Material Program*

41 CFR 101-20.103-4 and 41 CFR 101-20.105 Federal Property Management Regulations For Occupant Emergency Programs And Accident And Fire Prevention

Note *Operational Emergency Base Program*

44 CFR 302 Federal Emergency Management Agency Requirements For Emergency Operations Plans For State And Local Governments That Address Similar Hazards

Note *Operational Emergency Base Program*

49 CFR 172.600 series and 49 CFR 172.700 series DOT Requirements For Emergency Response Information And Hazardous Materials Training

Note *Operational Emergency Base Program*

DOE N 153.2 Connectivity to National Atmospheric Release Advisory Center

Note *Added by BCR 2004-013 - 5/19/04*

DOE O 151.1B, CRD Comprehensive Emergency Management System

4. 8 *Emergency Management Program and System*

Latest Revision: 11/30/04

Note *BCR 2004-001 updated standard from DOE O 151.1A, CRD. Paragraphs 1-6, and 8-13 only. DOE Management Programs DOE Emergency Management program requirements not addressed by cites laws and regulations or other WSS WBS elements (See WBS 2.10 Occurrence Reporting)*

40 CFR 300 Series	EPA Requirements Implementing The Comprehensive Environmental Response, Compensation, And Liability Act
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Note *Operational Emergency Base Program
EPA Requirements implementing the comprehensive environmental response, compensation, and liability act, including Title III, the Emergency Planning and Community Right-To-Know Act at 40 CFR 355*

NV O 151.1, CRD	Comprehensive Emergency Management System
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Note *Added by change request 2000-016 - 12/14/00*

NSO M 151.1-1A	Comprehensive Emergency Management System Manual--Preparation of the NNSA/NSO Emergency Readiness Assurance Plan
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Note *Updated by BCR 2004-045, 10/20/04.*

Section 4 - Measurement Parameters:

The section identifies recognized measurement parameters commonly used in private institutions and industry, as well as State and local governments to validate and evaluate the adequacy of EM plans, procedures, practices, programs and systems.

- Analysis of accident and emergency response trends.
- Drill and exercises conducted versus number of planned.
- Completion of identified EMPS development and implementation milestones and objectives, as planned and scheduled.
- Completion of identified EMPS development and implementation milestones and objectives, at or below cost projections or budget allocations.

Section 5 - Implementation Considerations:

All major NNSA/NSO on site contractors and their subcontractors contracts must continue to contain requirements for compliance with applicable emergency management laws, regulations, and DOE requirements required at the sites and facilities where the work will be performed. This NNSA/NSO complex-wide WSS will apply to all NNSA/NSO contractors, subcontractors, and users at NNSA/NSO-managed locales and provide the necessary and sufficient requirements, assuming effective implementation to protect the worker, the public, and the environment from adverse consequences.

The following provides a listing of the guidance documents recommended for use in the development and implementation of the NNSA/NSO EMP:

- Federal Emergency Management Agency, "Disaster Planning Guide for Business and Industry."

- Federal Emergency Management Agency, "Guidance for Developing State, Tribal, and Local Radiological Emergency Response Planning and Preparedness for Transportation Accidents."
- Environmental Protection Agency, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents."
- National Oil and Hazardous Substances Contingency Plan, National Response Team, "Hazardous Materials Emergency Planning Guide."
- Department of Health and Human Services (NIOSH), Publication No. 85-115, "Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities," NIOSH, OSHA, USCG, and EPA Four-Agency Document.
- National Fire Protection Association, "Hazardous Materials Emergency Response Handbook."
- U.S. Department of Transportation, "Emergency Response Guidebook."
- Environmental Protection Agency Publication No. 9285, "Standard Operating Safety Guides." Office of Emergency and Remedial Response, US EPA.

Section 6 - Work Environment:

All principal work activities are limited to management and administrative functions performed either in an office environment, or in a variety of construction, industrial, and field environments during the conduct of assessments, drills, and exercises. Staff superintendents may also be required to provide assistance to Incident Commanders at the scene of an actual emergency, situation dependent, or evaluate emergency response activities during post-emergency assessments, critiques, or investigations.

Section 7 - Uncertainties or Issues:

The type and nature of proposed or future operations and missions will significantly influence the scope and sophistication of the EMPS developed and maintained by NNSA/NSO. Unless an Operational Emergency HAZMAT Program can be developed and maintained as a foundation for future expansion and growth, the lack of a credible and effective EMP that is capable of addressing the operational requirements of new business lines or missions may hinder, or detract from the operational readiness of NNSA/NSO to satisfactorily startup the associated facilities and/or operational activities associated with these new business lines or missions.

Section 8 - Training:

The training of EM staff professionals and emergency response organization personnel is crucial to the maintenance of currency and proficiency in applicable industry standards, practices, concepts of operation, and program management.

Section 9 - Vulnerabilities:

The compliance status of the NNSA/NSO EMPS has historically been vulnerable to shortfalls in the funding and resources necessary to effectively develop and implement an Operational Emergency HAZMAT Program.

Section 1 - Work Activity:

The Environmental Radiological Monitoring and Compliance (ERMC) activity entails site-wide environmental surveillance and operational monitoring of site activities to ensure that all NTS operations comply with the environmental regulations and DOE orders listed under Section 3 - Standards of this Work Smart Standard. The Routine Radiological Environmental Monitoring Plan (RREMP), developed through a systematic planning approach using the EPA's Data Quality Objective (DQO) process, identifies the scope of this work activity for the listed standards.

Objectives of the monitoring program are to:

- .Verify compliance with Federal, state, and local regulations as detailed in the Routine Radiological Environmental Monitoring Plan (RREMP).
- .Establish environmental quality baselines.
- .Detect and characterize releases from DOE activities and facilities; assess impacts; estimate the dispersal patterns in the environment; characterize the pathways of exposure to members of the public; and estimate the exposures and doses to individuals, to the population, and to the biota in the vicinity of the site activity.
- .Monitor operational effluent for compliance with regulations or specific permit.

The execution of this work activity requires interface with and application of the following Work Smart Standards work activities:

- 1.1.5 - Training;
- 2.1.3 - Hazardous Waste;
- 2.1.4 - Solid Waste;
- 2.1.7 - Radioactive Waste;
- 2.12 - Hazard Assessment;
- 3.4 - Facility Maintenance;
- 3.6.b - Transportation (BN and WSI);
- 3.7 - Industrial Security;
- 4.2.1 - Occupational Safety & Health Program;
- 4.2.2 - Industrial Hygiene;
- 4.4 - Radiation Protection;
- 4.5 - Environmental Protection Program;
- 4.7 - Quality Program; and
- 4.8 - Emergency Management Program and System.

This work activity supports the following WSS activities by ensuring compliance with Section 3 standards:

- .2.1.2 - PCB;
- .2.1.3 - Hazardous Waste;
- .2.1.4 - Solid Waste;
- .2.1.7 - Radioactive Waste;
- .2.2 - Environmental Restoration;
- .2.6.4 - Spill Testing;
- .2.X - Hazard Category 2 & 3 Non-Reactor Nuclear Facilities;

- .3.8.2 - Water and Steam;
- .3.8.3 - Sewer;
- .4.1.1 - Fire Protection: Emergency Response;
- .4.4 - Radiation Protection;
- .4.5 - Environmental Protection Program; and
- .4.8 - Emergency Management Program and System.

Section 2 - Hazards and Management Issues:

Environmental, safety, and health hazards associated with work activities in Section 1 include:

- .Nuclear/radiological (human exposure)
- .Chemical (human exposure)
- .Biological (animal bites, stings, infectious disease [e.g., hantavirus])
- .Weapons (encounters in the field with unexploded ordnance)
- .Standard industrial safety (e.g., slip, trip, fall, equipment operation, heat stress)
- .Transportation (motor vehicle accidents)
- .Fire hazards
- .Natural phenomena (e.g., wind, lightning)

Management issues include:

- .Shut down of a work activity if terms and conditions of site or specific permits are not in compliance with federal regulation (e.g., NESHAPs).
- .Criminal and civil fines incurred by the site or work activity for violation of federal regulation.
- .Non-adherence could result in the loss of public trust and confidence in NNSA/NSO to conduct its activities in an ecologically responsible manner. Management needs to ensure the adequacy of the monitoring program in demonstrating, via the Annual Site Environmental Report and other reports, the adherence of NNSA/NSO activities to ecological regulations. The loss of trust and confidence by federal and/or state regulators, or private stakeholders, could significantly impact the ability of NNSA/NSO to conduct its activities.

Section 3 - Standards:

Standard

Title

10 CFR 20.1302

Compliance with the Dose Limit for Individual Member of the Public

Note Provides standards for monitoring of releases of Nuclear Regulatory Commission-licensed materials to unrestricted areas. Although NNSA/NSO is not regulated by the NRC, this NRC citation was selected because 10 CFR 835 does not address public exposure.

40 CFR 61 Subpart H

National Emission Standards for Hazardous Air Pollutants

Note Subpart H provides requirements for monitoring the release of radionuclides other than radon from Department of Energy facilities.

40 CFR 61 Subpart Q

National Emission Standards for Hazardous Air Pollutants

Note Subpart Q provides federal standards for radon emissions from DOE facilities

DOE M 231.1- 1

Reporting of Environmental Protection Information

Note DOE Order 231.1 "Environmental, Safety, and Health Reporting" requires an Annual Site Environmental Report (ASER) which provides a comprehensive summary of all environmental activities at all NNSA/NSO managed sites. This report has been routinely distributed to a wide range of federal and state regulatory agencies, and public and private NTS stakeholders. This report is commonly used to demonstrate the general efficacy and compliance of environmental activities at NNSA/NSO-managed sites. Continuance of this report is necessary to ensure public trust in the overall scope of environmental protection activities at NNSA/NSO-managed sites.

DOE O 450.1 CRD, 1a(1), 2a.(3), 2a(4),
10, 11

Environmental Protection Program

Note DOE Order 450.1 replaces 5400.1, Chapter IV, "Environmental Monitoring Requirements". This order sets the requirement to conduct environmental monitoring, as appropriate, to detect and characterize releases from DOE activities; assess impacts; estimate the dispersal patterns in the environment; characterize the pathways of exposure to members of the public; and characterize the exposure impact to the biota in the vicinity of the DOE activity. Contractors and NTS users meet the requirements of the cited parts of DOE O 450.1. (EH-41 is currently drafting a guidance document for implementation of 450.1). BCR 2003-031 replaced DOE O 5400.1(selectd parts) with these O 450.1, CRD parts.

DOE O 5400.5

Radiation Protection of the Public and the Environment

Note DOE Order 5400.5 establishes standards and requirements for operations of the Department of Energy (DOE) and DOE contractors with respect to protection of members of the public and the environment against undue risk from radiation. Contractors and NTS users meet the requirements of this order. Added by BCR 2003-031.

DOE P 430.1

DOE Land and Facility Use Policy

Note Governs the DOE management of its land and facilities as valuable national resources, based on the principles of ecosystem management and sustainable development. This policy is incorporated into the NTS Resource Management Plan.

DOE-STD-1153-2002

A Graded Approach for Evaluating Radiological Doses to Aquatic and Terrestrial Biota

Note Methods to be used for demonstrating compliance with DOE biota dose limits and recommendations for radiological protection of the environment.

Nevada Administrative Code (NAC)
444.750 - 444.840

Sewage Disposal

Note Required for state permitting of sewage system effluent. NNSA/NSO-managed facilities outside of Nevada are subject to requirements of host state and local regulations.

Nevada Administrative Code (NAC)
444.8632Disposal of Hazardous Waste - Compliance with Federal Regulations
Adopted by Reference

Note Adopts by reference federal standards for disposal of hazardous waste including monitoring requirements. NNSA/NSO-managed facilities outside of Nevada are subject to requirements of host state and local regulations.

Nevada Administrative Code (NAC)
445A.453 - 445A.459

Public Water Systems

Note Provides standards for sampling and monitoring of potable water systems. NNSA/NSO-managed facilities outside of Nevada are subject to requirements of host state and local regulations.

Section 4 - Measurement Parameters:

- .BN and Site compliance with radiological monitoring regulations and directives.
- .Percentage of sampling/monitoring performed in accordance with RREMP design and schedules.
- .Required environmental reports submitted/issued by required deadlines.
- .RREMP conducted within established budgetary limits.

Section 5 - Implementation Considerations:

The Routine Radiological Environmental Program (RREMP) based upon the Section 3 Standards has been implemented. Maintenance and advancement of implementation effectiveness and identification of forthcoming changes in the necessary and sufficient set of standards is an ongoing task related to implementation.

RREMP implementation of Section 3 Standards executes a portion of the scope identified under WSS 4.5 - Environmental Protection Program (EPP). The remaining 4.5 standards are executed as part of other work activities listed in the NSO WSS WBS.

Section 6 - Work Environment:

The Environmental Radiological Monitoring and Compliance (ERMC) activity includes outdoor field operations conducted across the entire NTS throughout the entire year, exposing personnel to the full range of climatic conditions. In some situations, personnel could be exposed to hazardous radiological, chemical or biological contaminants. Some aspects of the work activity are conducted in a laboratory environment which presents the potential for exposure to hazards from working with chemicals, radioactive sources, materials, and wastes, and other hazards unique to a laboratory environment. Other components are conducted in a standard office work environment.

Section 7 - Uncertainties or Issues:

Work activities that operate in a controlled or classified manor without environmental review risk non-compliance with environmental monitoring requirements called out by regulations, directives or permits.

Portions of the groundwater monitoring program are reliant on wells engineered, constructed, and operated for characterization scope under WSS 2.5 - Drilling and the Underground Test Area program. Consequently, these wells are inappropriate for long-term groundwater quality monitoring purposes. A Groundwater Monitoring Infrastructure Improvement Plan was developed and submitted to NNSA/NSO in May 2003 which presented an approach to rehabilitate many of these wells in order to improve the utility and credibility of the groundwater monitoring program. Implementation of this plan is crucial to support the groundwater protection position.

Section 8 - Training:

Personnel executing work under this activity must be trained according to standards provided in various WSS identified under Section 1 Work Activity.

In addition, personnel responsible for the collection of samples require training and qualification in specific instrumentation and techniques used.

Section 9 - Vulnerabilities:

Non-compliance with environmental monitoring and permit requirements could lead to fines and penalties or

termination of active programs.

The loss of public trust and confidence in the ability of NNSA/NSO to conduct its operations in an environmentally safe and sound manner could significantly impact the ability to bring new work or projects to NNSA/NSO-managed sites, ultimately jeopardizing the continued viability of these sites

Section 1 - Work Activity:

The Ecological Monitoring and Compliance activity entails site wide ecological surveillance and operational monitoring of on site (NTS only) activities to ensure that all employees and programs, while doing work for NNSA/NSO, comply with the ecological standards listed under Section 3 - Standards of this Work Smart Standard. Ecological Monitoring work to satisfy the Standards listed in Section 3 includes:

- .Monitor biological resources and sensitive habitats including wetlands
- .Implement and document effectiveness of mitigation actions for protection of biological resources
- .Conduct and report all compliance actions taken for threatened or endangered species
- .Assess impacts of proposed NTS activities on migratory
- .Provide project-specific mitigation recommendations to avoid harm to protected biological resources
- .Revegetate disturbed habitat

Specific field and office activities are performed by some BN personnel to ensure that all workers comply with the listed Standards, to document such compliance in annual reports, to develop company-wide procedures to ensure compliance, and to report non-compliance. These specific field and office tasks performed for the work described above includes:

- .Conducting visual inspections (surveys) of lands proposed for disturbance, of buildings/structures proposed for disturbance, of wetlands and other water sources, of wildland fire burn areas, of potential plant and wildlife habitat to identify the presence of sensitive plants or animals.
- .Driving to remote areas and walking to all survey sites where there are no roads.
- .Revegetating disturbed areas with native seeds and transplants. Work involves hand seeding, hand planting, drill seeding, spreading mulch, spreading soil stabilizer, and discing with standard agricultural equipment.
- .Writing reports, analyzing data, attending meetings, managing databases, and conducting all administrative office tasks needed for project management and conducting field tasks.
- .Photographing plants, animals, sensitive wildlife habitats, and important biological resources.
- .Trapping, collecting, and handling wild animals for purposes of making voucher specimens (killing and preserving) or for studying.

Execution of this work activity requires the interface with and application of other Work Smart Standards work activities and the standards cited therein. Below are the typical WSS work activities for which interfacing is expected. Others will be incorporated as needed:

- 1.1.5-Training
- 1.3.1-Procurement
- 1.5.1-Records Management and Document Control
- 1.5.5-Scientific and Technical Information
- 2.12-Hazard Assessment
- 2.4-Facility Maintenance
- 3.6.b-Transportation (BN and WSI)
- 3.7-Industrial Security

4. 9.2 *Ecological Monitoring and Compliance*

Latest Revision: 11/19/03

- 4.1.2-Fire Protection: Fire Prevention Activities
- 4.2.1-Occupational Safety & Health Program
- 4.2.2-Industrial Hygiene
- 4.4-Radiation Protection
- 4.5-Environmental Protection Program
- 4.7-Quality Program
- 4.8-Emergency Management Program and System
- 4.9.1-Environmental Radiological Monitoring and Compliance

Section 2 - Hazards and Management Issues:

Environmental, safety, and health hazards associated with work activities in Section 1 include:

- .Nuclear/radiological (human exposure)
- .Chemical (human exposure)
- .Weapons (encounters in the field with unexploded ordnance)
- .Standard industrial safety (e.g., slip, trip, fall, equipment operation, heat stress)
- .Biological (animal bites, stings, infectious disease [e.g., hantavirus])
- .Transportation (motor vehicle accidents)
- .Fire hazards
- .Natural phenomena (e.g., lightning)

Management issues include:

- .Shut down of a work activity if terms and conditions of site or specific permits do not comply with federal regulation (e.g., Endangered Species Act).
- .Criminal and civil fines incurred by the site or work activity for violation of federal regulation.
- .Non-adherence could result in the loss of public trust and confidence in NNSA/NSO to conduct its activities in an ecologically responsible manner. Management needs to ensure the adequacy of Ecological Monitoring in demonstrating, via the Annual Site Environmental Report and other reports, the adherence of NNSA/NSO activities to ecological regulations. The loss of trust and confidence by federal and/or state regulators, or private stakeholders, could significantly impact the ability of NNSA/NSO to conduct its activities.
- .The cost-benefit of work activities pursuing ecological objectives with ecological assessment.

Section 3 - Standards:

Standard	Title
16 U.S.C. 668, 54 Stat 250	Bald Eagle Protection Act
<i>Note</i>	<i>Protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds.</i>
16 U.S.C. 703, et seq., 40 Stat. 755	Migratory Bird Treaty Act
<i>Note</i>	<i>Prohibits the harm of any migratory bird, their nest, or eggs without authorization by the Secretary of the Interior.</i>

42 U.S.C. 668dd, Pub. L. No. 91-135

National Wildlife Refuge System Administration Act

Note Provides guidelines and directives for the administration and management of all lands within the system, which includes wildlife refuges. The Act forbids disturbance or injury of vegetation or killing of vertebrate or invertebrate animals, their nests, or eggs on System lands unless permitted by the Secretary of the Interior. The boundary of the Desert National Wildlife Range (DNWR), land administered within this System, is 5 km downwind of the HAZMAT Spill Center (HSC).

85 Stat. 649, Pub. L. No. 92-195

Wild Free-Roaming Horse and Burro Act

Note Requires the protection, management, and control of wild horses and burros on public lands and calls for the management and protection of these animals in a manner that is designed to achieve and maintain a thriving natural ecological balance. Although NTS is on land withdrawn from public use, NNSA/NSO (formerly DOE/NV) signed a Five-Party Cooperative Agreement in 1997 with Nellis Air Force Base, FWS, BLM, and the State of Nevada Clearinghouse to enhance management of the natural resources within ecosystems on the Nellis Air Force Range, the NTS, and the Desert National Wildlife Range.

DOE P 430.1

DOE Land and Facility Use Policy

Note Governs the DOE management of its land and facilities as valuable national resources, based on the principles of ecosystem management and sustainable development. This policy is incorporated into the NTS Resource Management Plan.

Executive Order 13112

Invasive Species February 3, 1999

Note Directs federal agencies to act to prevent the introduction of, or to monitor and control, invasive (non-native) species, to provide for restoration of native species, and to exercise care in taking actions that could promote the introduction or spread of invasive species.

Executive Order 13186, F.R. Vol. 66, No. 11, pg 3853

Responsibilities of Federal Agencies to Protect Migratory Birds January 10, 2001

Note Directs executive federal agencies to take certain actions to further implement the Migratory Bird Treaty Act (MBTA) if agencies have, or are likely to have, a measurable negative effect on migratory bird populations. Also directs all federal agencies to support the conservation intent of the MBTA, and conduct actions, as practicable, to benefit the health of migratory bird populations.

Nevada Administrative Code (NAC)
503.010-503.104

Hunting, Fishing, and Trapping; Miscellaneous Protective Measures

Note Specifies the classification of Nevada wildlife and also specifies protected and unprotected wildlife.

Nevada Administrative Code (NAC)
Chapter 527

Protection and Preservation of Timbered Lands, Trees, and Flora

Note Provides for the protection of indigenous flora of the State.

U.S.C. 1251 et seq., Pub. L. No. 95-917

Clean Water Act, Section 404

Note Section 404 gives the U.S. Army Corp of Engineers (USACE) regulatory authority to include permitting for discharging dredged or fill materials into wetlands and for any disturbance to the size or water quality of wetlands

U.S.C. 1531-1543, Public Law No. 93-205

Endangered Species Act, Section 7

Note Section 7 requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) to determine whether endangered and threatened species or their critical habitat may be jeopardized by proposed agency activities. A permit is obtained through Section 7 consultation, which allows the federal agency to proceed with activities, provided all terms and condition of the permit are followed.

Executive Order 11990, 42 F.R. 26961

Protection of Wetlands May 24, 1977

Note Requires governmental agencies to minimize the destruction, loss, or degradation of wetlands and preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities, including managing federal lands and facilities.

Section 4 - Measurement Parameters:

- .The number of incidental takes of threatened or endangered species
- .The number of disturbed acres mitigated for under permit (Endangered Species Act) via direct payment or revegetation
- .The number of required reports submitted/issued by the required due dates.
- .The number of directed tasks conducted on schedule and within established budgetary limits.
- .Percentage of sampling/monitoring performed in accordance with design and schedules for compliance demonstration.

Section 5 - Implementation Considerations:

Compliance with the Endangered Species Act requires that threatened or endangered species habitat which is disturbed by NNSA/NSO activities is mitigated by payment of a fee or by habitat restoration. Mitigation fees are paid for by the NNSA/NSO programs/projects responsible for the land disturbance. To implement habitat restoration, funds must be budgeted and provided by the NNSA/NSO program/project to pay for the initial seeding/planting costs as well as for multi-year monitoring to document revegetation success. A funding mechanism must exist to continue to monitor revegetated sites disturbed by projects which have been completed during previous fiscal years and for which no other active work scope exists.

Section 6 - Work Environment:

The Ecological Monitoring and Compliance activity includes outdoor field activities conducted across the entire NTS throughout the entire year, exposing personnel to the full range of climatic conditions. In some situations, personnel could be exposed to hazardous chemical or biological contaminants. Other components are conducted in a standard office work environment.

Section 7 - Uncertainties or Issues:

Work activities that operate in a controlled or classified manner without environmental review risk non-compliance with regulations, directive or permits.

Section 8 - Training:

Personnel responsible for the collection of samples require training and qualification in specific instrumentation and techniques used. Personnel responsible for compliance with U.S. Fish and Wildlife Service-issued permits for threatened and endangered species require a specified level of expertise and field experience.

Section 9 - Vulnerabilities:

Non-compliance with ecological monitoring and permit requirements could lead to fines and penalties or

termination of active programs.

The loss of public trust and confidence in the ability of NNSA/NSO to conduct its operations in an environmentally safe and sound manner could significantly impact the ability to bring new work or projects to NNSA/NSO-managed sites, ultimately jeopardizing the continued viability of these sites.

Section 1 - Work Activity:

The BN NV Counterintelligence (CI) Office's primary purpose is to deter and neutralize foreign industrial or intelligence activities targeting the United States and directed at or involving DOE/NNSA programs, facilities, technology, personnel, unclassified sensitive and classified information, both at home and abroad. The BN NV CI Office is a component of the centrally directed DOE/NNSA CI Program that plays a significant role within the U.S. Intelligence Community (USIC) and in particular within the National CI Community. The underlying principle of this role is that DOE and NNSA have a National Security mission and by conducting CI activities to protect the Department/Administration, the BN NV CI Office is carrying out a national CI requirement. DOE/NNSA CI efforts are closely coordinated at all levels with the Federal Bureau of Investigation (FBI), characterized by the conduct of joint investigations, training and awareness exchanges, and information sharing throughout the community; CI analysts participate in numerous community analytical projects. The undeniable conclusion is that the DOE/NNSA CI effort is itself a national program, as well as part of a much larger national agenda. Below are the six core CI mission areas:

- . Support protection of critical U.S. persons, information, and assets (force protection)
 - o Provide timely intelligence for deploying personnel
 - o Update managers to threat information as received
 - o Provide annual awareness to employees regarding reporting requirements and intelligence collection efforts
- . Detect and neutralize espionage
 - o Analyze interviews of personnel to determine foreign intelligence collection efforts directed against BN personnel, resources or technology
 - o Provide timely modus operandi to employees to ensure awareness of foreign intelligence collection efforts
 - o Raise awareness of employees to the collection potential of foreign intelligence services
- . Support protection of research, development and technology
 - o Provide analysis of collection efforts targeting technologies used/developed by contractor personnel
 - o Raise awareness of the populace associated with critical technologies
- . Support protection of critical infrastructure
 - o Provide a CI Cyber Technical Expert to identify and investigate foreign collection efforts targeting that utilize a cyber venue
- . Support protection of economic security
 - o Initially investigate all collection attempts, when/if identified as a US entity, provide updates to management and referral to appropriate law enforcement agency
- . Support protection of U.S. interests against covert foreign influence and manipulation
 - o Ensure up-to-date information is available regarding covert collection attempts targeting BN personnel
 - o Identify personnel vulnerable to exploitation by a foreign intelligence service, and investigate as appropriate
 - o Identify foreign intelligence collection attempts and investigate as appropriate, within regulatory guidance

Execution of this work activity requires the interface with and application of other Work Smart Standards work activities and the standards cited therein. Below are the typical WSS work activities for which interfacing is expected. Others will be incorporated as needed:

4.10. Counterintelligence Program

Latest Revision: 4/20/04

- . 1.1.1 Employment
- . 1.1.2 Employee Relations
- . 1.1.5 Training
- . 1.2.1 General Accounting
- . 1.2.2 Cost Accounting
- . 1.2.3 Specialty Areas (Finance)
- . 1.2.6 Budgeting
- . 1.3.1 Procurement
- . 1.3.6 Asset Management
- . 1.4 Information Services Management and Planning
- . 1.5.1 Records Management and Document Control
- . 1.5.3 Mail Management
- . 1.5.5 Scientific and Technical Information
- . 1.8 Administrative Systems and Controls
- . 1.9 Classification of Information
- . 2.12 Hazard Assessment
- . 3.4 Facility Maintenance
- . 3.7 - Safeguards and Security thru 3.6-6-Cyber security
- . 4.2.1 Occupational Safety & Health Programs
- . 4.7 Quality Program
- . Office of Defense Nuclear Counterintelligence, NNSA
- . Office of Counterintelligence, DOE

Section 2 - Hazards and Management Issues:

Hazards: The Hazards associated with the CI Program are limited to hazards associated with working in an office environment.

Management Issues: Limited resources across the Nevada Complex necessitate the proper identification and prioritizing of available resources to those programs identified as most at risk of targeting by our adversaries. The following list of priorities, while not all inclusive, addresses key CI issues:

- . Critical and time-sensitive CI support for the protection of nuclear weapon capabilities and other aspects of weapons of mass destruction from an immediate threat
- . Critical and time-sensitive CI support to the protection of personnel and assets from an immediate threat, i.e. terrorist or sabotage action
- . Detection and neutralization of espionage
- . Integrated CI support to the protection of nuclear weapons, other weapons of mass destruction and related programs
- . Integrated CI support to the protection of national security information, including classified technologies/applications
- . Integrated CI support to the protection of the DOE/NNSA information infrastructure
- . Integrated CI support to the other sensitive programs (within and outside DOE, i.e. WFOs, etc.)

The above provide for broad guidance of the CI Program and the SCIO will use available resources to fulfill the

4.10. Counterintelligence Program

Latest Revision: 4/20/04

priorities listed.

Section 3 - Standards:

The CI Office is required to adhere to a robust CI program methodology, as defined in the following documents:

Standard	Title
10 CFR 1008	Privacy Act Regulations, Records Maintained on Individuals and Systems of Records
<i>Note</i>	
10 CFR 709	Polygraph Examination Regulations
<i>Note</i>	
10 CFR 711	Personnel Assurance Program
<i>Note</i>	
42 USC 2001, et seq.	Atomic Energy Act of 1954
<i>Note</i>	
DCID 6/4	Adjudicative Guidelines for Determining Eligibility for Access to Classified Information
<i>Note</i>	
DCID 6/4	Adjudicative Guidelines for Determining Eligibility for Access to Classified Information
<i>Note</i>	
DCID 6/6	Security Controls on the Dissemination of Intelligence Information (7-11-01)
<i>Note</i>	
DOD Directive 5210.78R	DOD Polygraph Program
<i>Note</i>	
DOE Delegation Order No. 00-007.00	Director of CI
<i>Note</i>	
DOE M 471.2-1C	Classified Matter Protection and Control Manual
<i>Note</i>	
DOE Notice 142.1	Unclassified Foreign Visits and Assignments (7-14-99)
<i>Note</i>	

4.10. Counterintelligence Program

Latest Revision: 4/20/04

DOE Order 551.1B Official Foreign Travel

Note

DOE Order 5670.3 Counterintelligence Program (9-4-92)

Note

DOE/IN-0003 DOE Procedures for Intelligence Activities

Note

Executive Order 12333 United States Intelligence Activities (12-4-81)

Note

Executive Order 12958 Classified National Security Information

Note

Executive Order 12968 Access to Classified Information (8-2-95)

Note

Intelligence Authorization Act for 1995,
Section 811 Coordination of Counterintelligence Activities

Note

NSD-47 Counterintelligence and Security Countermeasures (10-5-90)

Note

PDD/NSC 12 Security Awareness and Reporting of Foreign Contacts

Note

PDD-63 Critical Infrastructure Protection (5-22-98)

Note

Presidential Decision Directive 61 Department of Energy Counterintelligence Program (classified document
with limited distribution), Feb 1998

Note Note: DOE Counterintelligence Implementation Plan (developed in response to PDD-61)

Secretary of Energy memorandum Secretarial Policy Memorandum Governing the Relationship between OCI
and ODNCI (1-19-01)

Note

Systems of Record 81 CI Administrative and Analytical Reports

Note

Systems of Record 84 CI Investigative Records

Note

Section 4 - Measurement Parameters:

The BN CI Program will develop and execute a CI program that follows CI regulatory and procedural requirements and supports the mission in the following areas:

- . Counterterrorism (one word)
- . Conduct CI and CT investigations
- . CI Information Technology (IT) activities
- . CI reviews of personal security files
- . Conduct effective training of the populace

Section 5 - Implementation Considerations:

The CI Program is structured to be consistent with the above mission areas and uses the latest edition of the "Counterintelligence Procedural Guide" (to include any updates promulgated through HQ) to assist in accomplishing tasks within the program. Although only advisory and not directive in nature, the guide is used as a tool in the development and preservation of a productive program in accordance with the DOE/NNSA Counterintelligence Implementation Plan and applicable regulations, policy and law.

Section 6 - Work Environment:

The CI work activity is primarily in an office environment. CI Office personnel also periodically travel to outlying locations.

Section 7 - Uncertainties or Issues:

The work activity conducted by the CI Office is directed funded from the Office of Defense Nuclear Counterintelligence, NNSA, with money received from the Office of Counterintelligence, DOE. The amount of monies allocated for the CI Program varies annually which affects the rigor with which the DOE CI goals can be pursued and the level of compliance with the standards cited in Section 3.

Section 8 - Training:

Training Plans for CI personnel are forwarded to HQ OCI on an annual to ensure all personnel have the opportunity to become subject matter experts.

Annual CI Awareness briefings are required for contractor employees and conducted in conjunction with the annual Security Awareness and OPSEC presentations to ensure minimal disruption to the work force. All CI assistance, outside of program participants (CI Office personnel), must absorb the costs of cooperation with the CI Office in their own budgets, to meet national level goals and objectives.

Section 9 - Vulnerabilities:

CI Officers are trained to detect, deter and mitigate the collection efforts of foreign adversaries. The lack of a fully functioning CI team leaves BN, NSO, NNSA and national security open to exploitation by foreign intelligence services. Information obtained by an adversary could be severely detrimental to the national security of the United States.

Section 1 - Work Activity:

The Field Intelligence Element (FIE) at the Remote Sensing Laboratory (RSL) provides for the management and control of foreign intelligence information utilizing the following activities:

- . Oversight of Intelligence Work for Others projects
- . Regular reporting
- . Operation of the Special Compartmented Information Facility (SCIF)
- . Maintaining classified repositories containing intelligence information
- . Review of all hard copy materials leaving the SCIF
- . Derivative classification for Intelligence material

Foreign intelligence information is National Security Information (NSI) that relates to the capabilities, intentions, and activities of foreign powers, organizations, or persons that would impact United States national security or foreign relations. The FIE is headed by an FIE Director who, although a BN employee, is directly responsible to the Director of the DOE Office of Intelligence (DOE/IN-1). FIE members are appointed by the FIE Director and receive in-depth briefings and training pertaining to the handling of foreign intelligence.

Section 2 - Hazards and Management Issues:

Hazards: The Hazards associated with the FIE are limited to hazards associated with working in an office environment.

Management Issues: FIE members and those certified by the FIE Director for limited access to intelligence information on a project-by-project basis, are required to have additional security access (clearance) beyond the DOE "Q" level of clearance. Currently this process is time consuming (taking a year or longer), and with a backlog of 28 individuals, has a negative impact on mission support. FIE activities are performed primarily in the RSL SCIF, which is a specially configured high security vault environment with its own communication and network systems installed and maintained under rules and procedures promulgated by IN-1. The Special Security Officer (SSO) and the Assistant Special Security Officer (ASSO) operate the SCIF on a day-by-day basis. BN indirect money funds the operation of the SCIF and support to its resources (computer systems, SSO support, training etc).

Section 3 - Standards:

FIE members are required to adhere to a robust set of standards, as defined in the below listed regulatory documents. Additionally, several policies issued by the Director, DOE Office of Intelligence, are required to be followed by all field activities.

Standard	Title
10 CFR 1008	Privacy Act Regulations, Records Maintained on Individuals and Systems of Records
<i>Note</i>	
42 USC 2001, et. Seq.	Atomic Energy Act of 1954
<i>Note</i>	

4.11. *Management and Control of Foreign Intelligence*

Latest Revision: 9/2/04

DCID 6/6	Security Controls on the Dissemination of Intelligence Information (7-11-01)
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Note

DOE Manual 471.2-1C	Classified Matter Protection and Control Manual, 4-17-01
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Note

DOE Notice 142.1	Unclassified Foreign Visits and Assignments (7-14-99)
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Note

DOE Order 551.1B	Official Foreign Travel
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Note

DOE Order 5670.1A	Management and Control of Foreign Intelligence
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Note

DOE Order 5670.2	Security of Foreign Intelligence Information and Sensitive Compartmented Information Facilities of 10-28-88
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Note

DOE/IN-0003	DOE Procedures for Intelligence Activities
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Note

Executive Order 12333	United States Intelligence Activities (12-4-81)
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Note

Executive Order 12334	President's Intelligence Oversight Board of 12-4-81
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Note

Executive Order 12958	Classified National Security Information
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Note

Executive Order 12968	Access to Classified Information (8-2-95)
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Note

SEN-6D-91	Departmental Organizational and Management Arrangements of 5-16-91
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Note

Section 4 - Measurement Parameters:

The FIE executes a program that follows IN regulatory and procedural requirements and supports the national security mission. The FIE provides intelligence support to DOE IN projects and intelligence work for others (IWFO) projects through the following measures:

4.11. *Management and Control of Foreign Intelligence*

Latest Revision: 9/2/04

- . Perform annual refresher updates for all SCI access holders and all staff certified to receive intelligence information.
- . Conduct comprehensive annual reviews of personal security files.
- . Conduct annual review of US persons data
- . Perform annual self inspection of SCIF and holdings
- . Provide quarterly reports to DOE IN and the Presidents advisory board on all intelligence activities being conducted under the auspices of the FIE.

The DOE IN in conjunction now with OA-50 conducts an annual inspection of all SCIFs and FIEs, to ensure compliance with applicable HQ-level direction and national level policy.

Section 5 - Implementation Considerations:

Many of the requirements placed on FIE activities are derived from laws or regulations which cannot be set aside. Implementation of these standards requires the support of all BN and NSO participants to meet national security objectives. Several Annual FIE Certification refresher briefings are conducted to ensure minimal disruption to the work force while ensuring compliance with the requirements set forth above.

Section 6 - Work Environment:

FIE personnel work primarily in an office environment. On occasion, FIE personnel will travel to offsite locations (other SCIFS or field locations) in support of project activities.

Section 7 - Uncertainties or Issues:

The oversight activity performed by the FIE Director and the support activities performed by the SSO and ASSO are supported with BN indirect funding through the RSL indirect budget. FIE members and certified FIE personnel support specific projects under direct funded job numbers. It is anticipated that both the support requirements and the direct funded work within the FIE will continue to increase.

Section 8 - Training:

All FIE members receive annual refresher training. In addition, the SSO, ASSO, Information Special Security Officer (ISSO), Information Special Security Manager (ISSM), and COMSEC custodians attend annual training mandated by DOE/IN.

Section 9 - Vulnerabilities:

Access, management and control of intelligence information must be closely and carefully controlled and a strong security program is essential to ensure the integrity of the program and to meet national security objectives.

Section 1 - Work Activity:

To address the categories of activities exempt from the DOE/NV Necessary and Sufficient Closure Process, a list is included to be used with the WSS to identify the additional DOE and DOE/NV Directives applicable to exempt work. The categories of activities, which were not included in the initial Necessary and Sufficient Closure Process, are as follows:

Nuclear Devise Assembly/Disassembly
Energetic Experiments with Special Nuclear Materials (SNM)
Nuclear Explosive Safety
Safeguards and Security of SNM
National Emergency Response Assets.

Section 2 - Hazards and Management Issues:

N/A

Section 3 - Standards:

CRD means Contractor Requirements Document attachment to an Order.

Standard	Title
DOE O 452.1B, CRD	Nuclear Explosive and Weapon Surety Program
<i>Note</i> Added by BCR 99-004. Revised by BCR 2001-016a.	
DOE O 452.2B, CRD	Safety of Nuclear Explosive Operations
<i>Note</i> Added by BCR 99-003. Revised by BCR 2001-016a.	
DOE O 5530.1A	Accident Response Group
<i>Note</i>	
DOE O 5530.2	Nuclear Emergency Search Team
<i>Note</i>	
DOE O 5530.3	Radiological Assistance Program
<i>Note</i>	
DOE O 5530.4	Aerial Measuring System
<i>Note</i>	
DOE O 5530.5	Federal Radiological Monitoring and Assessment Center
<i>Note</i>	
DOE O 5670.1	Management and Control of Foreign Intelligence

Note

DOE O 5670.3 Counterintelligence Program

Note

NV M 450.X2 Underground Nuclear Testing, Test Readiness, and the Threshold Test Ban Treaty Verification Program

Note Replaces NV O 56XE.1B, Underground Nuclear Testing per BCR 2004-012, 4/21/04.

NV O 450.X5, CRD Subcritical Experiments

Note Added by BCR 2003-020.

NV O 450.X6 Subcritical Experiments Safety Program

Note Added by BCR 2003-024.

NV O 452.1B, CRD Nuclear Explosive and Weapon Surety Program

Note Added by BCR 1999-004. Revised by BCR 2002-004.

NV O 452.2B, CRD Safety of Nuclear Explosive Operations

Note Added by BCR 99-003. Revised by BCR 2002-004.

Section 4 - Measurement Parameters:

N/A

Section 5 - Implementation Considerations:

N/A

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A

Section 1 - Work Activity:

A facility specific list of DOE Directives established to serve as the basis of requirements for the Device Assemble Facility. The activities conducted at the DAF consist of activities exempted from the Necessary and Sufficient Process.

Section 2 - Hazards and Management Issues:

N/A

Section 3 - Standards:

CRD means Contractor Requirements Document attachment to an Order.

Standard	Title
DOE O 452.1B, CRD	Nuclear Explosive and Weapon Surety Program
<i>Note</i>	<i>Added by BCR 1999-004. Revised by BCR 2001-016a.</i>
DOE O 452.2B, CRD	Safety of Nuclear Explosive Operations
<i>Note</i>	<i>Added by BCR 1999-003. Revised by BCR 2001-016a.</i>
DOE-DP-STD-3016-99	Limited Standard Hazard Analysis Reports for Nuclear Explosive Operations
<i>Note</i>	<i>Added by Change Request 2000-005, 3/1/2000</i>
NV O 452.1B, CRD	Nuclear Explosive and Weapon Surety Program
<i>Note</i>	<i>NV O 452.1A, CRD, added by BCR 99-004.</i>
NV O 452.2B, CRD	Safety of Nuclear Explosive Operations
<i>Note</i>	<i>Added by BCR 99-003. Revised by BCR 2002-004.</i>
NV M 450.X2	Underground Nuclear Testing, Test Readiness, and the Threshold Test Ban Treaty Verification Program
<i>Note</i>	<i>Replaces NV O 56XE.1B by Change Request 2004-012, 04/21/04</i>

Section 4 - Measurement Parameters:

N/A

Section 5 - Implementation Considerations:

N/A

Section 6 - Work Environment:

N/A

Section 7 - Uncertainties or Issues:

N/A

Section 8 - Training:

N/A

Section 9 - Vulnerabilities:

N/A